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magazine

FOR PLASTIC MODELLERS

JANUARY 1970

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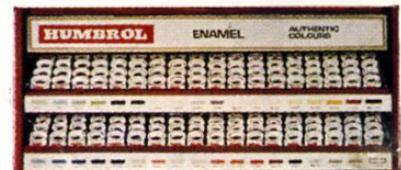


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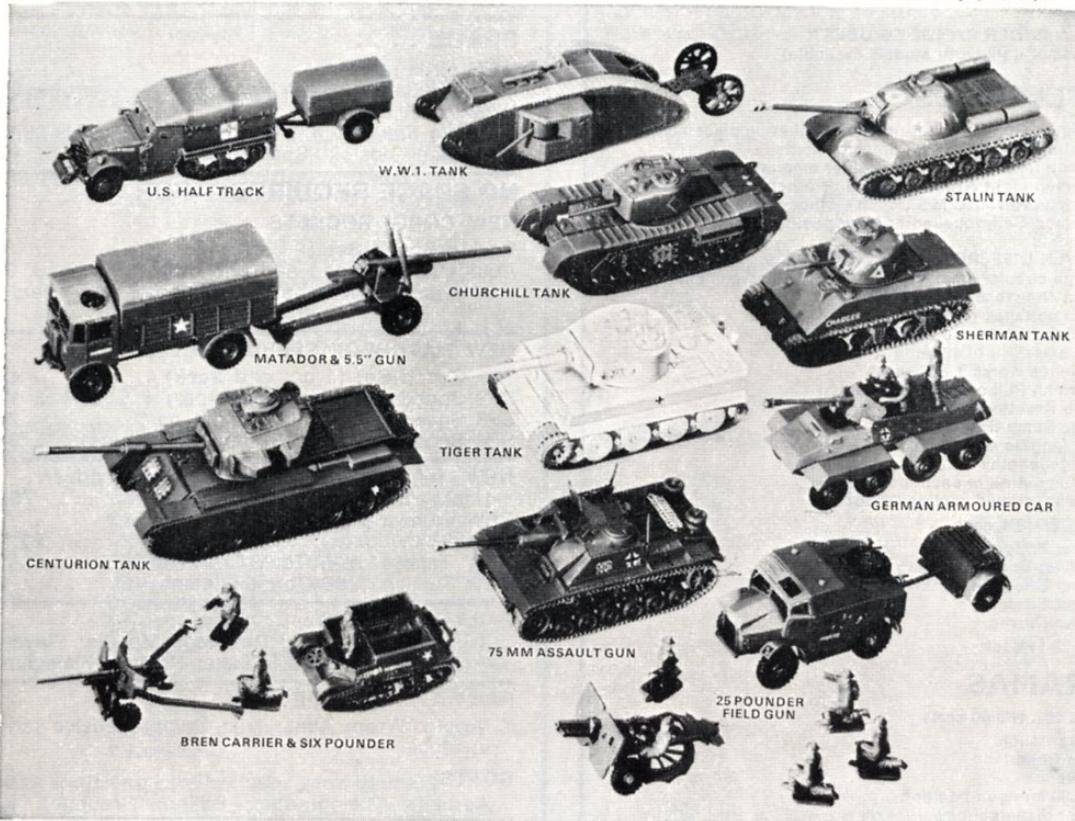


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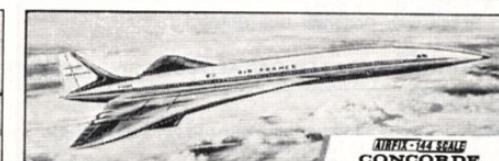
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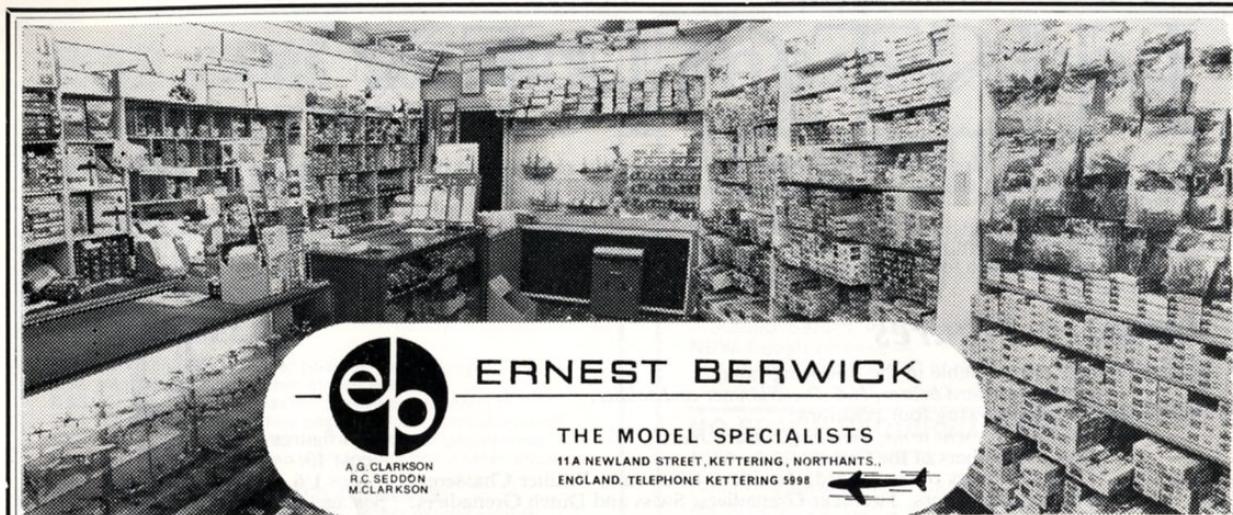
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FOR PLASTIC MODELLERS

January 1970

Volume 11 No 5

Editor Chris Ellis

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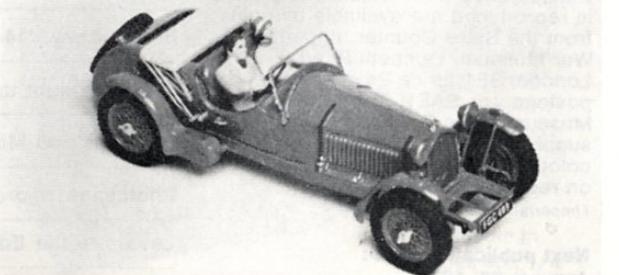
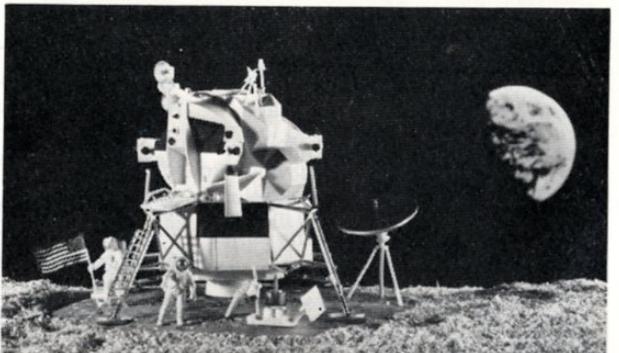
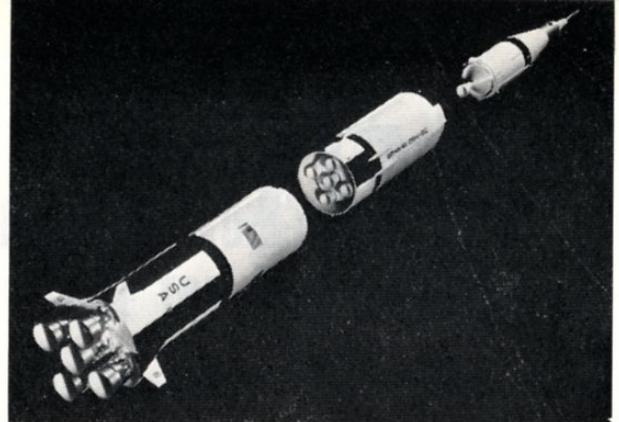
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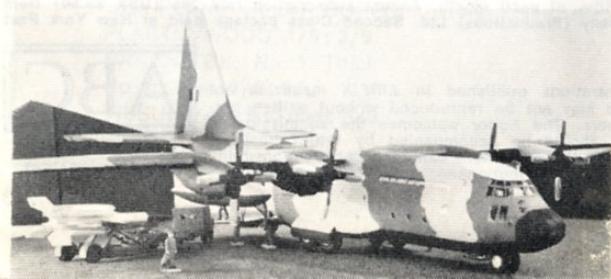
Alfa-Romeo 8C



THE Apollo Saturn V rocket and its lunar module (LEM) were introduced by Airfix to coincide with the recent Apollo 12 mission. These new and accurately detailed construction kits are designed with the usual Airfix attention to detail at value-for-money prices.

The Apollo Saturn V rocket is 31 inches high in 1:144 scale and comes complete with three stage power units, lunar module, command and service module and escape rocket. Details of Man's first landing on the moon during the Apollo 11 mission are recorded on a stand for the completed kit. The various stages can be separated as desired, so the model is as instructive as it is impressive. It makes an interesting size comparison with Airfix aircraft kits to the same 1:144 scale. The kit comprises 80 white moulded parts and retails at 21s 6d. Authentic transfers and a detailed instruction sheet are included.

An Apollo lunar excursion module (or LEM), and a simulated section of the moon's surface, which also serves as a base for two astronaut figures and their scientific equipment, are all included in a second 93 piece kit which is built to 1:72 scale. This should be a popular kit with possible conversion prospects as well since LEMs on later Apollo missions may well differ in detail. Matching the size of most Airfix aircraft kits, this super-detail model comes complete with transfers, instructions, and a tiny US flag to place in the simulated lunar surface.



Above, top to bottom: The Saturn V rocket shown broken into its separate stages; not the real thing, but the Airfix LEM and crew in a simulated lunar setting; Boeing 737 in Lufthansa colours; Alfa-Romeo 8C. **Left, below:** The Airfix C-130K Hercules with its Bloodhound missile 'load'.

SPECTACULAR new 1:72 scale model is the much-requested Hercules which Airfix have made as the RAF C-130K version. One of the biggest Airfix 1:72 scale kits yet produced, it features a fully detailed interior and a hinged loading ramp under the tail. Included in the box is a second kit for a Land Rover and Bloodhound air defence

Continued on page 242

AIRFIX magazine

NEW BOOKS

REVIEWED FOR MODELLERS

Army badges and uniforms

BADGES OF THE BRITISH ARMY, 1820-1960, by F. Wilkinson. Published by Arms & Armour Press, 16 Pembroke Road, London W11. Price 21s.

A N excellently produced paperback reference book by a well-known 'militaria' specialist, this volume deals entirely with British regimental and corps shako, cap, and collar badges in metal, and fully lives up to its sub-title 'An illustrated reference guide for collectors'. As the author points out, badge collecting is about the least expensive of military-interest hobbies, and this book ought to win a lot of new converts. It is well presented with beautifully reproduced black-and-white plates on every page and is nicely printed on art paper. Naturally not every badge is shown but the 416 covered are a fairly comprehensive selection from British regiments over the years and should be more than enough for the average collector to use as a standard reference.

INFANTRY UNIFORMS and CAVALRY UNIFORMS OF BRITAIN AND THE COMMONWEALTH, by Robert and Christopher Wilkinson-Latham. Two volumes, both published by Blandford Press Ltd, 167 High Holborn, London WC1. Price 30s each.

TWO more books in the well-known Blandford 'pocket encyclopaedia' series, these follow the usual format with 96 colour plates each, plus related historical and descriptive matter on each illustration in a text section at the back. Included with each plate is a supplementary detailed close-up of either the badge, sword, or other distinctive feature of regimental dress concerned. The infantry volume also includes colour plates showing the rifles, bayonets and swords in use over the period covered, which stretches from 1742-1855 in this case and from 1742 to the present in the case of the cavalry. Military uniform enthusiasts will need no second bidding to read these books. Our review copies came from Kirkgate Bookstore, 86A Kirkgate, Leeds 2, who can supply by post at 1s 9d extra per volume for postage.

Military tradition

DISCOVERING MILITARY TRADITIONS, by Arthur Taylor. Published by Shire Publications, Gubblecote Cross, Tring, Herts. Price 4s 6d.

A NOTHER in the well-known 'Discovering' series of paperbacks, this interesting little book deals with each arm of the British Army in turn and describes the regiments, organisations, origins and development of formations, and their badges and mottoes and so on. How the peculiar fashions and adornments of individual regimental uniforms came about is faithfully recorded, and a chapter is devoted to military music and customs. There is a detailed bibliography of useful further reading and a select list of commended military band records. At 4s 6d it's a good buy for the military enthusiast. It includes pictures and drawings and numerous regimental badges.

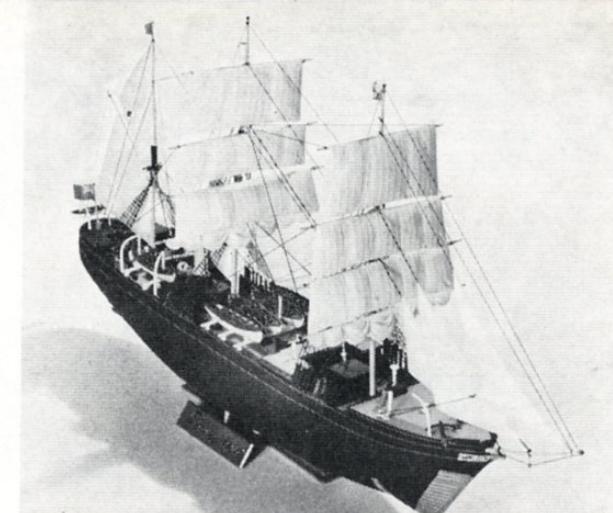
Navy mixture

GERMAN WARSHIPS OF THE SECOND WORLD WAR. A folio of technical drawings. Second edition, price 30s.

THE BOOK OF KNOTS, by 'Tom Bowline'. Facsimile reprint. Price 15s.

Both published by Conway Maritime Press, Conway Chambers, 140 Lordship Lane, London SE22. Trade distributors: Patrick Stephens Ltd, 9 Ely Place, London EC1.

WE reviewed the first edition of the German warship publication about a year ago, remarking then on its usefulness for warship modellers. The book has now been enlarged with further drawings, a new stiff binding, dust jacket, and a page of technical data giving basic details and histories of each ship illustrated. The quality



Above: Latest Airfix 'Classic Ship' is HMS Discovery of polar exploration fame, described in this month's 'News from Airfix'.

of reproduction also appears to be enhanced and altogether this makes a large and interesting publication. Added since last time are 'Wolf', 'Mowe', 'Karl Galster' and 'Narvik' (Z23-39) class destroyers. The carrier *Graf Zeppelin*, cruisers *Koln* and *Emden*, and all the famous German battleships, battle cruisers, pocket battleships, and heavy cruisers are featured, fourteen plates in all. Full side and front elevations, plan views, and cross-sections are given for all ships and there are horizontal and vertical scales for each drawing. There is no constant scale, however, each vessel filling the space available. At a cost of about 2s per plan this is a worthwhile buy for ship modellers.

The second book is a facsimile reproduction of a book on knots and splices first published in 1876. It is still of practical value to mariners, even in the nuclear age, though most will read it for its historical interest.

From Osprey

FINNISH AIR FORCE, 1918-68 and **SPAD SCOUTS**, both compiled by Richard Ward. Published by Osprey Publications Ltd, PO Box 25, 707 Oxford Road, Reading, Berks. Price 21s each.

L ATEST two releases in the Aircam series, these follow the now well-established popular format of masses of rare pictures, colour scheme drawings in colour and line, plus introductory historical text. In our view the Finnish volume is the best yet from this publisher, possibly because of the wide and interesting range of British, Russian, German, and American aircraft which the Finns have used over the years. This makes the colour art rather more attractive to look at than usual because of the great variety of shapes and marking styles over the years. The longer-than-average text is by Christopher Shores, and this particular volume is a most interesting and worthwhile publication of interest to all warplane enthusiasts. It is \$2 in the 'special' series, incidentally. The Spad volume is more in the usual Aircam line, covering the SVII-SXIII models of this famous aircraft. World War I aircraft enthusiasts will find a feast of colour and rare photographs here. Text is by J. M. Bruce.

Latest from Aero

CHECKERTAIL CLAN, by Ernest R. McDowell and William N. Hess. Price 36s 6d.

DOUGLAS SKYRAIDER, by B. R. Jackson. Price 47s. Both published by Aero Publishers Inc, Fallbrook, Calif, USA and distributed overseas by W. E. Hersant Ltd, 228 Archway Road, London N6. Prices include postage.

THESE two books are well up to Aero's best standards as good well produced histories of their respective subjects. *Checkertail Clan* covers the story of 325th Fighter Group in North Africa and Italy and is packed with superb rare pictures of the Warhawks, Mustangs, and Thunderbolts (plus a few more unusual types) operated by the group in the 1942-45 period. It includes some fine tone drawings, as well, of selected aircraft. There are very complete appendices which include 'aces', squadron commanders, mission

Continued on page 250



Above: Seascape with Sea Kings. Two No 700S Squadron aircraft pose for Alan Hall's camera near Porthleven on the Mount's Bay coast, XV648:86 nearest.



CURRENTLY the largest helicopter in British service, the Westland Sea King HAS Mk 1 joined the Royal Navy when No 700S Squadron was commissioned at RNAS Culdrose, near Helston, Cornwall on August 19, 1969. Since then the Squadron, which was formed to carry out intensive flying trials of the Sea King, has used six aircraft of the type to prove this new and sophisticated piece of machinery as the Navy's long endurance, anti-submarine helicopter.

Built under licence

The Sea King is built by Westlands under licence from Sikorsky and is the latest development of the Sikorsky S.61 range of helicopters of which over 500 are now in service or on order. For its primary role as a submarine hunter/killer aircraft, the Sea King is equipped with an advanced anti-submarine weapon system including a tactical display on which sonar contacts are integrated with search radar and navigation information. It can carry either four Mk 44 torpedoes or—when working in shallow waters—depth charges.

It is powered by two Rolls Royce Gnome H.1400 engines each capable of producing 1,500 shaft horsepower. The engine, which is basically the same as that fitted to the Wessex 3, has a ten-stage axial flow compressor, an annular combustion chamber, a two-stage axial flow gas generator turbine and a three single-stage power turbine. The great advantage of the Sea King over its predecessor the Wessex is that of endurance.

When I spoke to Lieut-Commander V. G. Sirett, the Officer Commanding No 700S Squadron, he told me that the Sea King can remain on station for up to four hours against one and a half hours for the Wessex. This makes a considerable difference in the operational capability of the Sea King and the trials squadron claim that it can do the equivalent work of two Wessex helicopters at once.

When I visited the Squadron in November they were about half way through their planned trials programme before the Sea King

Flight control system	13
Engines	46
Airframe	180

As well as the five aircraft which are flying on the reliability trial a sixth aircraft has recently been delivered which is used for other flying. On the basis that this sixth aircraft will fly a similar number of hours as the other five the total flying during the trials period will result in 2,700 hours. Included in these are 1,300 hours on day and night 'dunking'; 400 hours on anti-submarine screening and navigation, and less time on such things as search and rescue, deck landing practice, load carrying and the Sea King's secondary role of carrying troops, photography, etc.

Full records are kept on in-flight pro-formas and a book in the crew room. During each sortie the captain of the aircraft makes continual notes on the aircraft's performance and any deviation from the specified performance ratings are noted so that each month the

Below: XV648 under automatic control comes into the hover above a very cold, grey looking sea before lowering the sonar detection gear for an anti-submarine search.



Project Officer on the Squadron, who co-ordinates requirements and subsequent information on the trials, can produce a report which is then circulated to all interested parties.

Throughout my day at Culdrose with the trials squadron the endurance of the aircraft was continually stressed. Providing the trials go satisfactorily the aircraft will undoubtedly be of great advantage to the Royal Navy in a number of roles. Although no official figure has been released it is thought that 60 are on order at the present time and these will equip the cruiser conversions, such as HMS *Blake*, the Royal Fleet Auxiliary fast replenishment tankers and possibly the aircraft carriers if the axe is prevented from falling on these valuable ships.

The aircraft is obviously very versatile. Apart from the seaplane type lower hull which permits water landings in an emergency, the Sea King has a very useful gimmick in an automatic means of folding its main rotor blades so that the aircraft can be stowed in flight deck hangars without the problem of manhandling these blades before the job can be done. I spent an hour flying in XV648 during which time two of its roles were demonstrated.

Basically, the anti-submarine equipment of the Sea King is the same as that in the Wessex 3. Two crew members man the tactical display weapons system and sonar gear. When a likely area has been chosen for submarine search the Sea King using its AW 391 search radar sweeps the area in azimuth to detect other aircraft in the search and also surface vessels. The radar sweep is presented as a plan position picture on the automatic tactical plot board—called an auto-plot. This board represents a fixed search area and looks rather like a radar scope. The helicopter's position and its associated radar sweep traverses the auto-plot motivated by signals from the Doppler navigation system, thus the changing range and bearings of other search helicopters and ships are known at all times.

On reaching the search area, the aircraft turns into wind and by use of the automatic flight control system can come into a pre-determined hover height of 200 ft and remain at a constant height above the waves whilst the sonar gear is dropped into the sea to search for underwater objects. When a contact signal from the sonar has been analysed by the operator from his control panel the position of the object located can be transmitted to the auto-plot. The area all round the helicopter is searched automatically and the contacts appear on the screen giving position and bearing for translation and action by the crew.

Naturally, the auto-plot can also be used as a navigation instrument and although it is not 100 per cent accurate I was shown that after several hours flying the instruments were only a small degree off the true position of the aircraft.

Search and Rescue

The Sea King is capable of performing certain secondary roles, both with and without the primary role equipment fitted. For specialised search and rescue roles, the sonar equipment is removed but the Doppler system for the auto-plot is retained in order to provide an accurate navigational system for long over-water flights. Search radar can be retained or removed according to requirements.

Seating for up to 27 persons is available in the cabin—a noted difference from the Wessex 3, which is by any standards very cramped. The rescue hoist is mounted above the rear cargo door and has a 600 lb capacity and variable speed control. The rescue winch operator has a hover trim controller, working through the automatic flight control system which enables him to command small amounts of fore, aft and lateral ground speed. During my sortie in the Sea King I was able to try out this new innovation for search and rescue helicopters.

All that can be seen beside the main cargo door is what appears to be a small control stick. The winch operator sitting over the lip of the cabin can look down and as the control is able to feed into the flight control system (FCS) the required movements there is no need for constant spoken directions to the pilot by the winch operator as is at present necessary in the Whirlwind and Wessex.

A smoke float was thrown into the sea and I was invited to position the helicopter above it. This proved to be more difficult than I imagined. Having only 10 per cent of the control common to the main flight controls in the pilot's cockpit, fierce movements of the small stick took some time to be translated by the FCS before the helicopter was brought into the desired position. The tendency was to over-control and I had great difficulty in following the bobbing

January, 1970



Above, top to bottom: Five miles off the coast this Sea King, heading into the prevailing wind has its sonar gear lowered and is in auto-controlled hover whilst a thorough search is made of the under water area around it. 'Break!'—Two aircraft of No 700S Squadron executing a steep turn over RNAS Culdrose caught at the moment of lowering the undercarriage before landing. Putting '86' to bed after the sortie. The main rotor blades can be folded automatically from the cockpit but two naval airmen make sure that there is no accident.

smoke float below us. Full trials have yet to be carried out using this system, but the crew with whom I flew seemed to have a few doubts about its efficiency.

The standard version of the Sea King without over-load fuel, but including allowances for take-off, lifting survivors and 10 per cent reserve fuel can rescue 20 people out to a radius of 200 nautical miles from its base. This will obviously be a great advantage in search and rescue missions.

With the Sea Kings' introduction into squadron service the Royal Navy will possess a fully integrated airborne hunter/kill weapon system capable of operating successfully against submarines independently of ships and is comparable with the most advanced helicopter in the world today. Its very useful secondary roles will be a valuable adjunct to its main purpose and it is already obvious from what I heard and saw at Culdrose that it will be a valuable asset to the future development of the Fleet Air Arm.



The Royal Navy Sea King

MODELED FROM THE AIRFIX KIT BY ALAN W. HALL

THE Airfix kit of the Sea King is the US Navy version and to convert it to the Westland-built model at present coming into service with the Royal Navy is relatively simple. The conversion is ideal for the beginner. My work in converting the kit was done under ideal modelling conditions with a real aircraft readily available for comparison. Accurate colour matches could be made and many of the small details which help to distinguish the above-average model could be included because of first-hand inspection. For this I am indebted to Lieut-Commander P. H. Stuart, the Public Relations Officer at RNAS Culdrose, who gave every possible assistance in providing the necessary facilities.

For completeness and to add a little more interest for the more advanced worker I detailed the cabin interior and also modelled the search and rescue equipment together with torpedoes. It is however more than likely that these combinations will not be used in operational service. The anti-submarine version of the Sea King will possibly not carry the winch mounted above the cabin door at the same time as a full armament load. Alternatively, the armament will not be carried whilst the helicopter is working in the ASR mode. However, this conversion represents a 700S Sqn machine at the present time.

Most of the conversion work on the Sea King lies in the addition of the radar 'thimble' on the fuselage spine and small modifications around the engine area. In order to assist the modeller who may be tempted into conversion work for the first time with the Sea King, I have included extra notes on the construction work as there are several hints and tips worthy of note that I discovered during the construction.



STAGE 1 Although the detail of the sonar gear and the auto-plot are barely visible they are worth inclusion as when the cabin door is open much of the interior can be seen. If it is not included the inside looks extremely bare. I had the drawings and photographs accompanying this article available, and from them I was able to construct a framework made of heat stretched sprue into which small box-like shapes made from balsa represent the control consoles were fitted. Two extra seats from the spare parts box were added in front of the consoles. The circular chamber to house the sonar equipment which comes with the kit was left in position as the working of this unit depended on its being in place. A piece of dowel rod $\frac{1}{8}$ inch in diameter was used for the cable drum of the sonar gear and this was grooved with a file to represent a cable in the housed position. The floor area was painted a very dark grey and the control consoles in either black or medium grey with silver for the area of the auto-plot display. The flight deck instruments were painted as white dots and squares on a medium grey ground, and the seats were painted matt dark blue and all assembled before the cabin floor was stuck into the left hand fuselage half. The interior of both fuselage halves were painted a medium grey before the cabin transparencies were put in place.

STAGE 2 Before cementing the two fuselage halves together the tail rotor assembly was completed and the two sponsons containing the undercarriage legs were stuck together. Contrary to the instructions given with the kit the fine nylon thread used for the sonar gear cable was inserted before joining the fuselage halves as it is extremely difficult to get it into place after these are joined. To make sure that it did not slip out during subsequent operations a small piece of adhesive tape was added under the fuselage to keep it in place. I found that with a little scraping and filing at certain points it was easy to get the two fuselage halves to fit neatly before applying the polystyrene cement. After this had been done and the two fuselage halves joined they were held together by adhesive tape for at least 24 hours before subsequent work began.

STAGE 3 Sponsons, tail rotor assembly, excluding the rotor itself, and the top part to which the sonar cable is attached were then added and in the case of the latter carefully filed to fit and eased sufficiently so that on turning the centre spindle the cable would move up or down as required. The sonar gear was added to the other end of the cable. The cabin door and its associated grooved runners were also put in place.

Continued on page 220

Below: The fuselage assembled. Note that the joints have been made secure by tightly binding the fuselage with adhesive tape. The 'cable' of the sonar gear, made from fine nylon thread is positioned before cementing the two fuselage halves together.



Above left: The Observer's position in the Sea King. Note the autoplot on the left and the sonar ranging gear on the right. All instruments are either black or grey. The autoplot has a dull silver face and the two square CRT displays on the right of the seat are a deep orange. Interior colours are light grey with a matt black floor. **Above, right:** Sea King flight deck. The instrument panel is light grey and the coaming black. Seat cushions are either beige or dark blue.

Sea Kings of No 700S Squadron

Serial	Code
XV644	82
*XV645	83
XV646	84
XV647	85
XV648	86
XV649	87

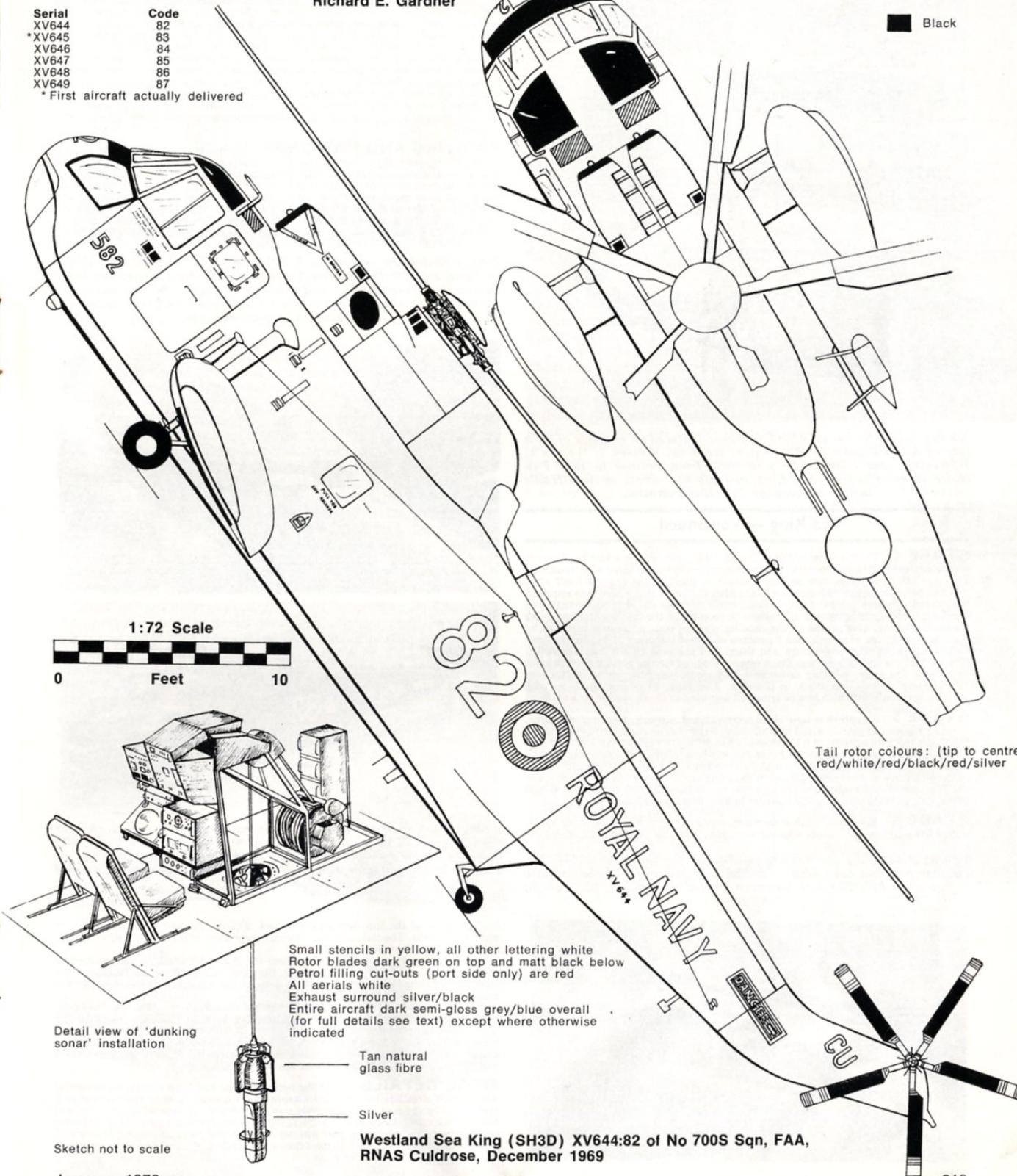
*First aircraft actually delivered

Drawings by
Richard E. Gardner

Black tinted upper panels
in cockpit glazing

Tan

Black





Above: Recent flypast at RNAS Culdrose featured an example of each type of A/S helicopter in RN service. Sea King, Wessex 3, Whirlwind, and Wasp, are seen here from bottom to top. Two closer views of another Sea King, aircraft 82, subject of Alan Hall's model, are on page 218 (MoD photos).

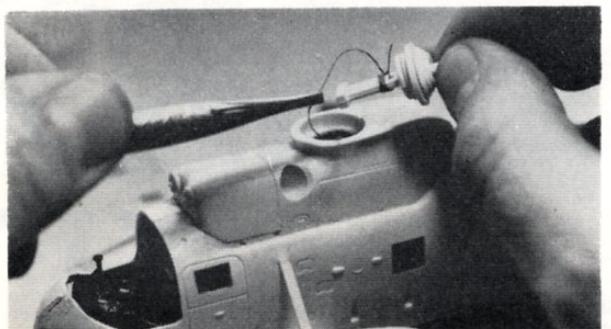
Sea King — continued

STAGE 4 The position of the radar 'thimble' was then marked by dividers on the fuselag spine and a locating hole was roughly cut out by using a drill and files. This was left in a rough state so that it could be fitted to the radome itself after this had been constructed. Reference to the plan will show the dimensions required for the radome, this being cut from a small block of balsa and shaped according to the dimensions given, allowing a $\frac{1}{4}$ inch to be recessed in the fuselage itself to make a secure housing. The profile of the radome was cut out in the first instance by comparing it to the plan and then by means of varying degrees of sandpaper converted into a round cross-section and fitted into the hole in the fuselage spine. When complete the radome was given several coats of talcum and clear dope mixture to fill the grain, rubbing down with fine sandpaper after each application. When complete this was stuck in position. You may, of course, have a scrap plastic part available which can be trimmed and filed to shape for the 'thimble'.

STAGE 5 Attention is now given to the alterations around the engine area. A small amount of plastic wood was added to the top of each jet orifice to change the shape from an upright to a horizontal oval. When dry it was sandpapered and filed to obtain the revised contour. On the left-hand side of the fuselage a small piece of balsa wood was added to make up the small bulged area that appears aft of the jet orifice and immediately under the main rotor. The balsa was stuck on to the fuselage after having been roughly cut to shape and then sandpapered and filled with the talcum and dope mixture before being complete.

STAGE 6 The main cabin transparency and other small details were finally added before painting. Before sticking the canopy in place the inside faces of the

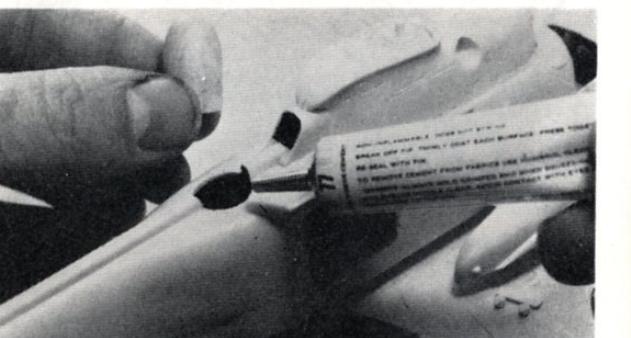
Below: Assembling the winding mechanism for the sonar cable. The circular part has been filed to fit the hole in the top of the fuselage before assembly. The nose has been treated with plastic putty to fill any gaps.



roof panels were painted matt black to simulate the darkened perspex of the real thing which is used to prevent direct sunlight affecting the pilot's vision. The under-carriage wheels, which were pre-painted black with grey hubs, were then assembled and various small radio aerials mounted under the fuselage, on the spine and also on the port sponson and tail rotor assembly. For precise positions, see the drawing. The tail-wheel, winch and armament carriers were added direct from the kit after a small amount of filing and cleaning up had been done. Under the rear fuselage close to the tail rotor a larger aerial was fashioned by filing a wooden cocktail stick into the correct shape. Torpedoes were assembled, cleaned up and when dry given a coat of yellowish-orange paint. The main rotor was assembled but like the tail rotor was set on one side until the fuselage painting had been completed.

PAINTING AND MARKINGS The painting of the Sea King is relatively simple, apart from the fact that the overall colour has to be mixed. For this I used equal parts of Humbrol HB9 Sea Blue Gloss and 27 Matt Sea Grey, the mixture of matt and gloss paints providing the semi-matt finish I needed. A matt black anti-glare panel was painted immediately in front of the cockpit canopy and around the edges of the nose observation windows. Matt Sea Grey went on the outer parts of the sponsons to simulate the covers of the flotation gear. The main rotor has the upper sides of the blades in matt Dark Green (Humbrol 30, Airfix M3), whilst the under-sides were painted matt black, which extended just over the

Below: Fitting the radome. A hole in the spine has been cut using a drill and circular files to roughly achieve the shape. After the balsa radome has been cut out and roughed to shape the two parts are worked to a finished state together. A $\frac{1}{2}$ inch recess is left on the radome for mounting into the fuselage.



Above: The completed model. Both armament and rescue winch have been mounted on the model but it is doubtful if both of these extras will be flown on the operational aircraft at the same time. Note that the code '582' does not appear below the cockpit window on this side of the fuselage.

leading edges of the top-sides of the blades. Yellow tips and small parallel lines were also added. The tail rotor was painted semi-gloss black and the tips in alternate red and white bands.

Stencilled lettering was either cut from the Airfix kit markings or painted in white using a very fine brush. Similarly, the large figures 82 on the fuselage sides were hand-painted and so was the area around the jet orifice which came from a mixture of matt black and silver.

A Frog Wessex kit which I had previously converted provided the 'ROYAL NAVY' and 'Danger' markings on the rear fuselage. Letraset was used for the '582' under the port side of the canopy. The 'CU' on both sides of the rear rotor assembly and the '82' on the nose were hand-painted. However almost all these could be obtained from other sources such as spares left from other conversions and the various commercial transfer sheets now available.

FINAL DETAILS After the main painting had been completed the aerial wire, which stretches from the port sponson via a mast close to the radome to a stub aerial by the rear rotor assembly was made from heat treated scrap sprue and fixed in place by tiny drops of polystyrene cement. The main and tail rotors were stuck in place and the sonar gear was painted after the paint on the main rotor had dried to allow this part to be wound down as required. The torpedo armament was the final item to be glued in place.

Military Modelling

by

Chris
Ellis

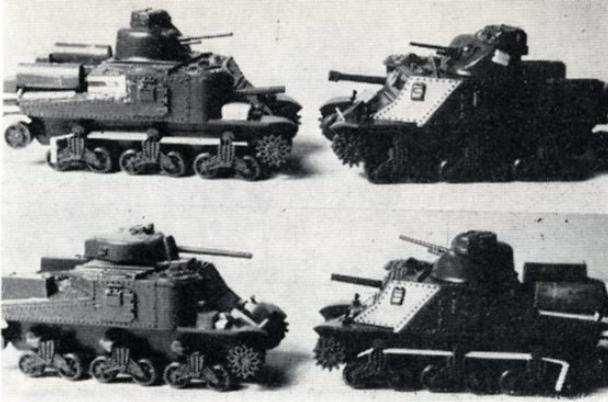
SIMPLE M3 VARIANTS

QUITE apart from conversions to special purpose types, the Airfix M3 Medium tank offers an almost limitless range of detail changes to depict various production or service models and modifications. These are well within the scope of all military enthusiasts, even complete beginners. Four are described this month, with more to follow in later issues.

Early production M3; I didn't make this one myself, but the real thing is illustrated. This is simply the Airfix kit as supplied with only two small changes. Before assembling the hull, cut off the stowage boxes from the rear decking. This is easily done by sawing them off flush with an X-acto razor-saw. Then file off all trace of the moulding until just a rectangular hole remains. Cover this with a rectangular piece of thin writing paper cut to fit the entire width of the sloping section. After painting this will look just like part of the hull plating. The other change is to cut the short cylindrical recuperator from beneath the M6 37 mm gun provided, so making a M5 gun. A colourful example is shown with the pre-war type of US star (as painted on pre-war US aircraft) on sides and hull front, and the company/vehicle code D-10 in white on the turret sides. No other numbers were carried on this olive drab vehicle. A suitable D-10 can be applied from Blick dryprint sheets. Other vehicles were D-8, D-9, etc, in the same style.

Canadian Lee; Fittings peculiar to the Lees used by the Canadians can easily be added in model form. As before, cut off the stowage boxes and cover with paper rectangles. Then assemble the complete kit (with Lee turret) as per the instructions. A $6 \times 8 \times 3$ mm stowage box with sloping top is cemented ahead of the barbette. I used a piece cut from a miniature plastic petrol pump for this but any suitable scrap can be cut to shape. For the fuel tanks I used T-34 fittings

Below: The three completed models after painting. Left side: Grant Command and two views of the 3rd Carbs Lee. Right: 3rd Carbs Lee and two views of Canadian Lee.



Top, left: Canadian Lee. Top, right: Lee of 3rd Carbs, Burma. Above, left: Grant Command—note late pattern bogies. Above, right: Another view of the Canadian Lee. All models shown unpainted with plastic card modifications in white.

left over from previous conversions. You need one complete tank each side lengthened by a 3 mm slice from a second tank. The locating tab is cut off and the tanks are supported horizontally by a plastic card strip at the rear end.

A stowage box is fitted in each cut-out at the rear of the hull. These can be made from plastic card 8 mm high, 6 mm deep at the base, and 5 mm wide. I found that a very easy way to make them was to use the rear corners of the two halves of the Grant turret supplied in the kit. Cut and file these to shape, using the pictures for reference. A further stowage box fits immediately behind the fighting compartment at the right hand rear corner and this can be cut to shape from one of the previously discarded hull stowage boxes. The outer face is 9 mm long. Both this and the rear stowage boxes were held in place by strip metal brackets and short lengths of Microstrip make

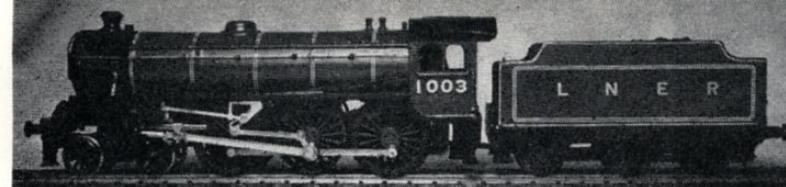


Top, left: M3 Medium of US Army on exercises, November 1941, lacking hull stowage boxes and with M5 37 mm gun (US Official). Top, right: Grant Command tank of South African armoured division in Italy, 1945. Note observation seat and late pattern bogies. Above, left: Lee of 3rd Carbs in Burma, 1945. Note extra stowage boxes and absence of cupola on this vehicle. Above, right: Canadian Lee showing mud chutes, extra fuel tanks, and added stowage boxes (Imperial War Museum).

adequate representations in miniature, as shown on the unpainted model.

Lastly mud chutes are added between the bogies, cut very simply from strips of plastic card and taking measurements from the bogie spacing on the model. The rear section, 5 mm long, was pivoted to the axle of the rear bogie wheel by means of a thin metal arm as clearly shown in the pictures. On the model a sliver of plastic strip is used. The vehicle illustrated and modelled, T78873, was newly delivered, dark green overall, and carried no other markings when

Continued on page 250



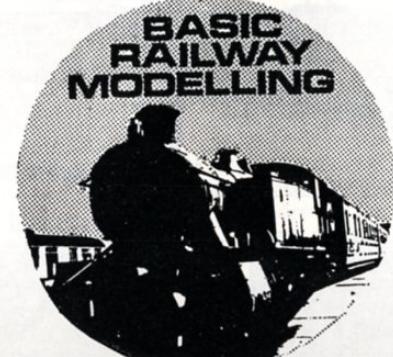
Finished in LNER Apple Green (available in the Humbrol Railway Enamels range) and fully lined out, the completed B1 makes a handsome and attractive addition to any locomotive stud—and a good stable-mate for the Triang or Trix Flying Scotsman. For those with a less steady hand, plain black is a perfectly acceptable finish.

Completing the 'B1' TENDER AND FINAL DETAILS

THERE are any number of ways of building a tender for the LNER B1 locomotive conversion described last month, varying according to the degree of accuracy you require. Full 100% authenticity could of course be obtained by scratch building and this would not be unduly difficult using plastic card. Alternatively, one could use a set of parts from the range of Wills Finecast cast metal locomotive kits. However, it does seem a pity to waste the tender parts left over from the Airfix 'Schools' kit used for the locomotive and, with a little licence, it is possible to make a reasonable model using these as a basis.

There are several respects in which the SR 'Schools' and standard LNER 4200-gallon tenders differ. The most apparent are the wheelbase and the shape of the frames and body sides. The three axles of the 'Schools' tender are equally spaced 6½ ft apart whereas the LNER wheelbase of 13½ ft is unequally spaced at 7 ft 3 inches plus 6 ft 3 inches. The frames of the 'Schools' tender are solid whereas the LNER tender frames are deeper and perforated with two unequal size oval holes cut in between the axleguards. Lastly, the 'Schools' tender has a distinctive slope to the upper part of the side panels whereas the LNER tender is flat sided. However, these features can be changed quite easily as I hope to show.

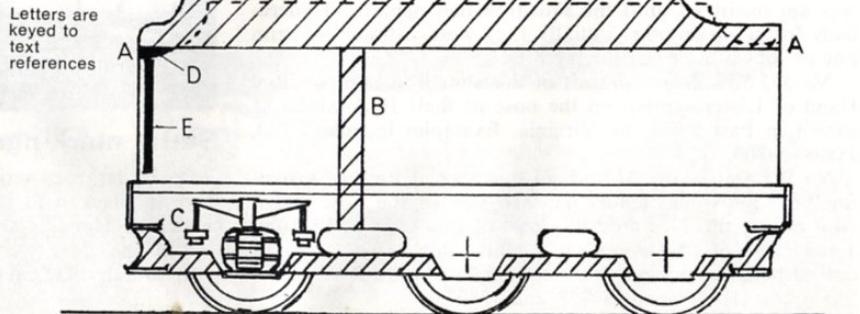
The drawing gives a general idea of the modifications required. To begin with, the tops of the sides (Airfix 'Schools' tender parts 4 and 8) were removed along the line marked A on the drawing. Next, each side was cut vertically into two, halfway between the leading and centre axle. The two parts of each side were then cemented either side of a strip of 40 thou plastic card, 3 mm wide; see B on the drawing. A strip of plastic card approximately 10 mm wide was cemented behind the join to give added strength.



BY NORMAN SIMMONS

40 thou plastic card was used to extend the side sheets above line A on the drawing. These were cut to shape and cemented in place. I do not suggest backing the join with a re-enforcement strip as this might foul the tender top (part 7) when it comes to fixing this part. It is essential to leave the cement to dry thoroughly before resuming work on the sides. My method is to give the joins a thorough wash back and front with a brush of liquid cement and then leave the sides to dry overnight on a level surface such as

Below: Full-size (4 mm scale) drawing for the tender converted from the 'Schools' tender. Shaded areas show plastic card additions. Original outline dotted.

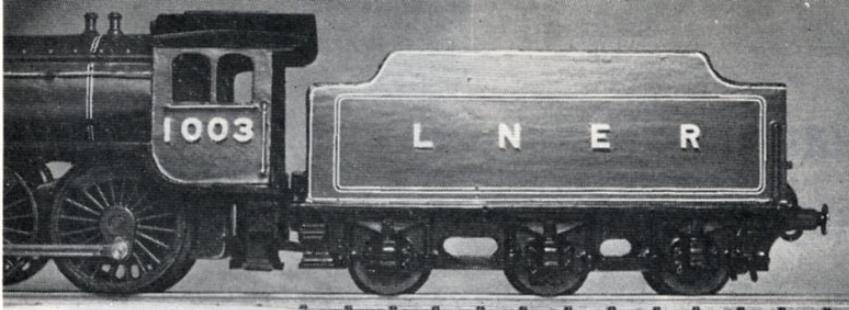


a sheet of glass with a weight on the top to keep them flat. The sides can then be finished by removing the raised lining and smoothing the joins with file and sandpaper. I used Isopon to fill in the gaps at the front end of the side sheets as at D and E on the drawing.

The shape of the frames was altered by cutting arches between the axleguards and cementing strips of 40 thou plastic card at the base, thereby deepening the frames and making the characteristic oval shaped holes. To do this it is necessary to remove the anchor points for the spring hangers and the brake rigging details. The spring hangers can be shortened and the anchor points carefully replaced as shown at C on the drawing. The oval shaped holes are best finished off with a round file after the cement has thoroughly set.

The tender back (part 6) needs to be modified by increasing the height to match the sides. It is best to cut the strip of 40 thou plastic card used for this purpose oversize and to trim it to shape to match the sides after assembly. The offside step, oval number plate and the lampirons halfway up either side can be removed.

The tender top (part 7) can be used without modification apart from lengthening it at the rear end by 3 mm to match the increased length of the sides. But strictly speaking the rear end shield, that is the bulkhead behind the coal bunker, should be further forward leaving space for a water pick-up dome. I recommend reference to the drawing in F. J. Roche's *Historic Locomotive Drawings in 4 mm Scale*, published by Ian Allan, for this detail. It would be possible to make this modification using the Airfix part or alternatively it might be easier to scratch build a new tender top using



Above: A close view of the completed tender coupled up to the locomotive. LNER lettering and numbers are from the 'Kingsprint' Letraset range, available from main railway hobby shops.

40 thou plastic card. A piece of wooden dowelling would be suitable for making the dome.

The standard LNER tender was fitted with 3 ft 9 inch diameter disc wheels. The spoked wheels in the Airfix 'Schools' kit can be easily converted to discs by filling in the centres with Isopon or plastic putty but unfortunately the Airfix wheels are approximately 1.5 mm undersize. Since the footplate of the LNER tender is higher than the 'Schools' tender it is if anything preferable to fit oversized wheels rather than undersized and I recommend a set of Romford 16 mm tender wheels. It will be found that there are other considerable advantages in using metal wheels such as the Romford which will more than justify the extra expense. The Romford wheels will, of course, require conversion to disc but Isopon can be used for this purpose just as successfully as with the Airfix wheels.

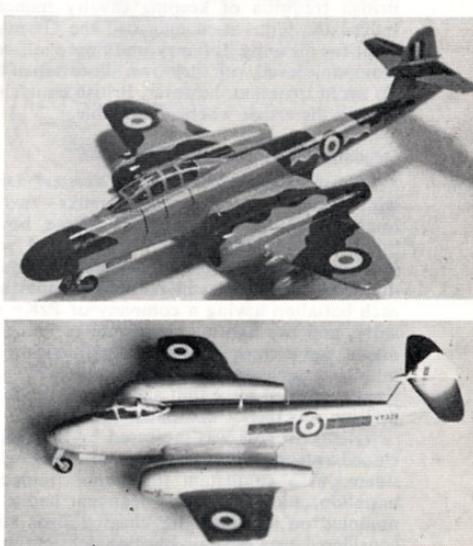
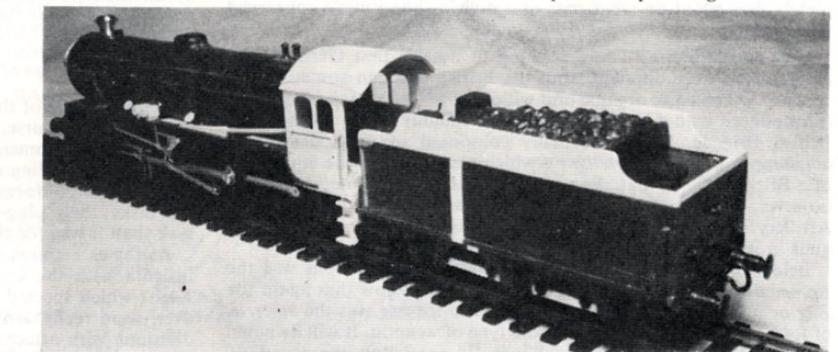
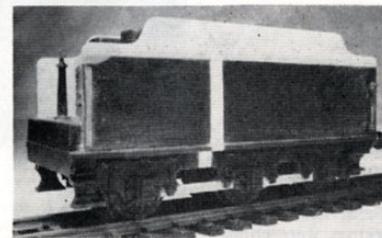
Assembly of the tender can now proceed as described in the Airfix 'Schools' kit instruction sheet. I do recommend doing a dummy run first, holding the parts together with elastic bands instead of cement, if only to check the wheels to make sure they revolve easily. It may be necessary to use some washers on the leading and trailing axles to ensure they fit centrally between the frames without the wheels binding on the sides. It is preferable to give as much play as possible to the centre axle to enable the wheels to negotiate the sharpest curves on your layout.

With the body and wheels assembled the tender can be completed by fitting the handbrake, vacuum and steam heating pipes, buffer heads and couplings. If working screw or three-link couplings are fitted it is preferable to fit these to the tender back (part 6) before assembly. The steps can be left to last and hereby hangs another tail! Another feature distinguishing the 'Schools' and LNER

The completed B1 model may not

be completely 100% accurate in detail but I hope the photographs show it is at least recognisable in outline and very close to scale. It is certainly an economic proposition; apart from the two Airfix 'Schools' kits the only bought-out items were the Triang-Hornby Britannia chassis, tender wheels, chimney, nameplate (not necessary for all B1s as comparatively few had names), handrail knobs and wire, plastic card, paint and transfers. In fact you can make this model for around £5, which is very reasonable.

Left: The converted 'Schools' tender showing added parts in white plastic card. **Below:** A view of the complete locomotive and tender conversion prior to painting.



Recent letters published in the magazine requesting Meteors and other post-war jet types brought us scores more letters in support. From the pile we picked these pictures sent in by Roger Levy to give his idea of what 1:72 scale Meteor kits could look like. Both are extensive conversions from the old Frog Meteor 8 kit, not now available. **Top:** Meteor NF11 WD642: A of 256 Sqn. **Above:** Meteor F4 VT328 of 263 Sqn. Correspondence on this subject is now closed as far as publication goes. We think the point has been made.



Wehrmacht Markings 1939-45

GUIDE FOR MODELLERS
by W. J. K. Davies

Part I: Panzer Division emblems

PETER HODGES, in his article on British Armoured Division Markings (AIRFIX magazine, December 1968) found it necessary to give some description of the organisation of a division; I find it even more necessary since German tactical markings were completely dependant on what part of a division the vehicle concerned belonged to.

Unit nomenclature: The first thing to note is that German unit designations were different from the British and can sometimes be confusing. The basic organic unit within a division was the Regiment (pronounced with a hard 'g') which was roughly the equivalent of a British Brigade. It was normally composed of units designated *abteilungen*—singular *abteilung*—which were roughly the equivalent of a British infantry battalion or tank regiment. An *abteilung* could, however, be a much smaller unit if it was semi-autonomous—e.g., the Artillery Regiment of a division had *abteilungen* of as few as twelve guns in its make-up.

Below the *abteilung* in infantry and armour formations was the *Kompanie* (British company or squadron) and below that again the *Zug* or platoon. The artillery equivalent to the *zug* was the *batterie*, of four or six guns depending on the type of weapon. It will be noted that German divisional nomenclature did not follow the peculiarly British tradition of keeping cavalry names for ex-cavalry units. Indeed the terms used indicated the German idea of self-containment for all units. Infantry units were self-contained right down to *Kompanie* level, with their own allocation of heavy support weapons. To avoid irritation, however, British equivalent designations will be used in the article wherever possible.

Organisation of the Panzer Divisions

Like the British, the German Panzer* Divisions started the war with a big preponderance of tanks—two armoured 'regiments' totalling some 400 tanks in all. These, however, were largely the lightly armoured PzKpfw I and II and when the more modern PzKpfw III and IV became available in quantity late in 1940 the divisional allocation was reduced to one three-battalion regiment, each battalion having a company of PzKpfw IV for close-support work, and two fighting companies of PzKpfw III. Since the Wehrmacht had always included in the division at least two motorised infantry regiments of two battalions each, together with a battalion-sized armoured recce unit and strong divisional services, the Panzer division was then a well-balanced force.

Its effectiveness was increased by the fact that the recce unit included a strong infantry component, the Engineer battalion was considered as a combatant force and equipped as a strong infantry battalion, and the artillery regiment had a proportion of its guns mounted on armoured SP chassis! Even so the OKW apparently considered even this organisation deficient in infantry, some Waffen-SS armoured divisions having no less than six—in some cases nine—infantry battalions attached besides their recce unit. An infantry battalion, incidentally, was normally an integral part of its regiment, but the regiment was by no means permanently allocated to a particular division.

For most of the war, therefore, the Wehrmacht armoured division was, at full establishment, a formidable and very flexible fighting



Above: A Sd Kfz 222 armoured car of von Kleist's Panzer Group displays the white 'K' carried by all the divisions within the group. It has the standard Wehrmacht road number plate (black on white) carried by all wheeled vehicles and displays an obscured symbol on its left mudguard, possibly the pre-1941 marking of 3rd Pz Div (an arrow in a circle), or else the tactical sign of an individual unit—these are featured in a later instalment. Vehicle is dark grey overall, shown during the final occupation of France, June 1940 (Imperial War Museum).

force, consisting of the organic units shown in Table 1. As the war progressed, of course, it was often the case that divisions were at less than full establishment. This was one of the inevitable consequences of being a defending army but was also partly accounted for by the German habit of forming battle groups out of various units for specified tasks; their 'plug-in' unit organisation made this a much simpler task than it was for the British.

As far as I know, very few of these battle-groups had their own insignia with the exception of the ones under Guderian and von Kleist which sported big white 'G's or 'K's respectively. These, however, were really army corps composed of two or more complete divisions with attached units. A look at Table 2 which shows the composition of typical Panzer divisions in early 1945 will show how units could be exchanged and re-allocated; even the services units—nominally permanent—could be switched between divisions.

The tactical markings of the panzer divisions were laid down by OKW orders and fall into four categories: divisional emblems; national insignia; AFV numbers; and tactical signs applied, at least in theory, to all motor vehicles without AFV numbering. Bridge plates were occasionally carried but were not universal by any means.

Divisional Insignia: As with the British, all German divisions had an identifying sign—and one might say with some truth that the less efficient the division the more elaborate its sign! Thus in the Wehrmacht it was the infantry divisions which produced colourful heraldic or pseudo-heraldic patterns; The Panzer divisions had the simple and strictly logical signs as shown in Fig 1. They no doubt speeded painting and identification but are depressingly prosaic. The few exceptions belong to divisions 'converted' at a late date from infantry or *panzer grenadier* (armoured infantry) divisions which occasionally clung to their old emblems. The notable ones are: Von Senger u Ettelin's 24 Panzer, formerly 1st Cavalry Division, which kept its jumping horse symbol; 116 Panzer formed in 1944 from 16 Panzer Grenadiers, which retained its running greyhound; and the elite Grossdeutschland division which was officially a *panzer*

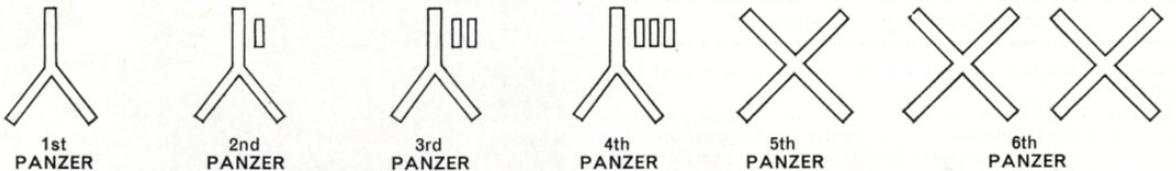
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Table 2. Unit allocations to typical Panzer Divisions, 1945

Organic Unit	1	9	16	20	24
Official Aux Unit No	81	60	16	92	40
Recces Bn	1	9	16	20	24
Panzer Sigs Bn	37	81	16	21	40
Panzer Rgt	1	33	2	59	24
Pz Gren Regt (armd)	1	10	64	112	21
Pz Gren Regt (Mot)	113	11	79	92	26 (Fusilier)*
Panzer Art Rgt	73	102	16	92	89
Panzer A/T Bn	37	50	16	92	40
Panzer Eng Bn	37	86	16	92	40

* An ordinary infantry regt, replacing a complete regiment 'lost' during the Stalingrad campaign.

*This is simply the German for 'armour', the correct past tense being 'gepanzerte' (gp).



(Note: Earlier divisional signs prior to 1940 re-organisation and Russian invasion will appear in a later instalment)



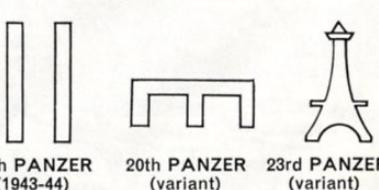
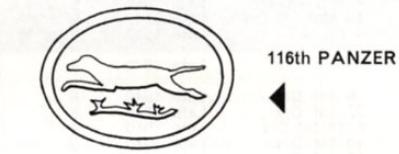
Drawings by Gordon Riddle



Fig 1: Panzer Division symbols from late 1940—early 1941
Painted in yellow, white, or sometimes black depending on background

Table 1.
Theoretical Organisation of a 1944-pattern Wehrmacht Panzer Division at Full Establishment.
(NB: in practice some units were likely to be under-strength and equipment varied widely, often including captured and adapted vehicles.)

Organic Unit	Fighting Components (not incl HQs and support organisations)	Main Equipment
Armd Recce Bn	Armed Recce Bn	16 8-w or $\frac{1}{2}$ track armoured cars (20 mm cannon) c 20 SdKfz 251 SPWs c 30 SdKfz 250 SPWs (or VWs) c 27 SdKfz 251 SPWs (Bn equip) included 13 SP 75 mm guns in SPWs
Armd Sigs Bn	Non-combatant AA Zug PzKpfw IV Bn PzKpfw V Bn	8 x 3.7 cm SP AA guns 76 PzKw IV (F2, G or J) 76 PzKw V (Panther) 75 SdKfz 251 SPW 12 75 mm SP guns c 380 vehicles 17 SPW; 6 x 150 mm SP Inf guns 28 SdKfz 251 SPW
Panzer Grenadier Regt (gepanzerte)	Armed Inf Bn Motorised Inf Bn Infantry Gun Coy Engineer Coy	As above but with all Inf units motorised, not armoured Two Companies SP A/T One Coy towed A/T
Panzer Grenadier Regt (motorised)	As above but with all Inf units motorised, not armoured Two Heavy AA Batteries Two Light AA Batteries Mixed SP Battery	28 75 mm SP A/T guns 14 75 mm A/T guns 8 x 88 mm AA guns 18 x 20 mm AA guns 6 x 150 mm SP hows (Hummel) 12 x 105 mm SP gun/hows (Wespe) 12 x 105 mm gun/hows (towed) 8 x 150 mm hows (towed) 4 x 10 cm guns (towed)
Anti-Tank Bn	Light Battery Medium Battery	Organised as Infantry Bn with one armoured Engineer coy (28 SPW); two motorised Engineer cos; Bridging Column
AA Bn		Non-combatant
Armd Artillery Regt		
Armd Engineer Bn		
Div Services (Medical, post, etc)		



Panzer Markings—continued

grenadier unit but had a full tank regiment and an armoured recce battalion.

The signs should be consulted with the chart in Table 3 showing origin and date of formation of all regular panzer divisions. The signs shown are those used after the 1940 expansion; originally the ten panzer divisions had different signs (eg, 1 Panzer had the Y right-way up) but these appear to have been changed before the Russian campaign, perhaps to confuse enemy intelligence. The same desire probably accounts for the later variants shown in Fig 1.

The insignia were normally painted in thick yellow lines and could be found almost anywhere on the front or back of vehicles. The right (near) side or the off (left) side at the front and rear were favoured spots, but they were also painted above or beside tactical signs on occasion. The signs could be in white if camouflage—eg, sand-based—made it desirable, and most of the variants shown were normally in white. On occasion units painted their signs in yellow on a black rectangular background for greater clarity, but this appears to have been a strictly local and unofficial procedure.

Divisional signs of some of the more competent Panzer grenadier divisions have been included as a contrast, together with the Afrika Korps insignia worn by all vehicles of that organisation. The details varied slightly from unit to unit.

Table 3. Origin and Dates of Formation of Regular Wehrmacht Panzer Divisions, with Indications of their main battlefronts.

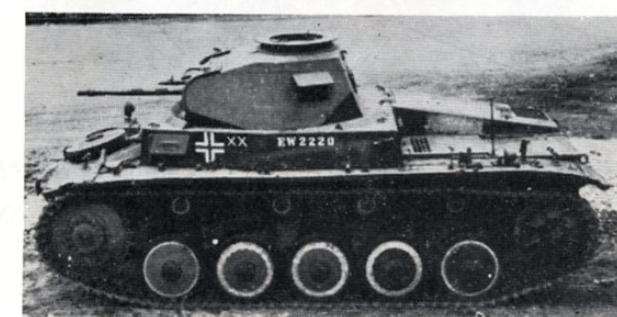
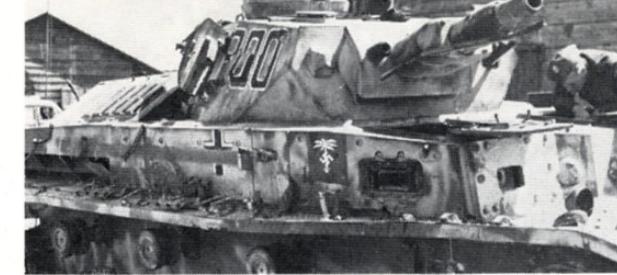
(W=Western Front; E=Eastern Front; I=Italy; A=Africa)

Div.	Formed from (unit)	Year	Main Theatres of Operations	Remarks
1	'new'	By 1939	W(1940); E	
2	'new'	By 1939	W(1940); E; to W(1944-5)	
3	'new'	By 1939	W(1940); E	
4	'new'	By 1939	W(1940); E	
5	'new'	By 1939	W(1940); E	
6	1 Light Div *	1940	W to 1943; E	
7	2 Light Div	1940	W(1940); E	
8	3 Light Div	1940	W(1940); E	
9	4 Light Div	1940	W(1940); E; to W, 1944	
10	'new'	1940	W(1940); E; to A, 1942	Destroyed Tunis 1943. Not reformed
11	SchutzenBr 11	Late 1940	E; to W, 1944	
12	2 Mot Inf Div	Late 1940	E	
13	13 Mot Inf Div	Late 1940	E	
14	4 Inf Div	Late 1940	E to W	
15	33 Inf Div	Late 1940	A	
16	16 Inf Div	Late 1940	E	
17	27 Inf Div	Late 1940	E	
18	4/14 Inf Div	Late 1940	E	
19	19 Inf Div	Late 1940	E	
20	19 Inf Div	Late 1940	E	
21	5 Light Div	Mid 1941	A to W, 1944	Destroyed Tunis, reformed 1944
22	'new'	Mid 1941	W; E	Destroyed Spring 1943
23	'new'	Mid 1941	W	
24	1 Cavalry Div	End 1941	E; I; E	Virtually wiped out 1943 but reformed immediately
25	PD Norwegen	Mid 1942	W; E(1943-)	
26	23 Inf Div	Mid 1942	W; to I(1943)	
27	Pz Gren Regt 140	Late 1942	E	
116	16 Mot Inf Div	Spring 1944	W	An ephemeral unit lost early in 1943
PL†	Lehrtruppen	Late 1943	W	

Notes:

* Light Divisions were formed as highly mobile, high quality infantry divisions—the mechanised equivalent of cavalry. The lack of armour was soon felt and they were soon converted with the exception of 90th Light which became a Panzer Grenadier division.

† Panzer Lehr, formed as a strong reserve from Démonstration units.



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(Below) Fig 2: Typical Pz Gr Div signs

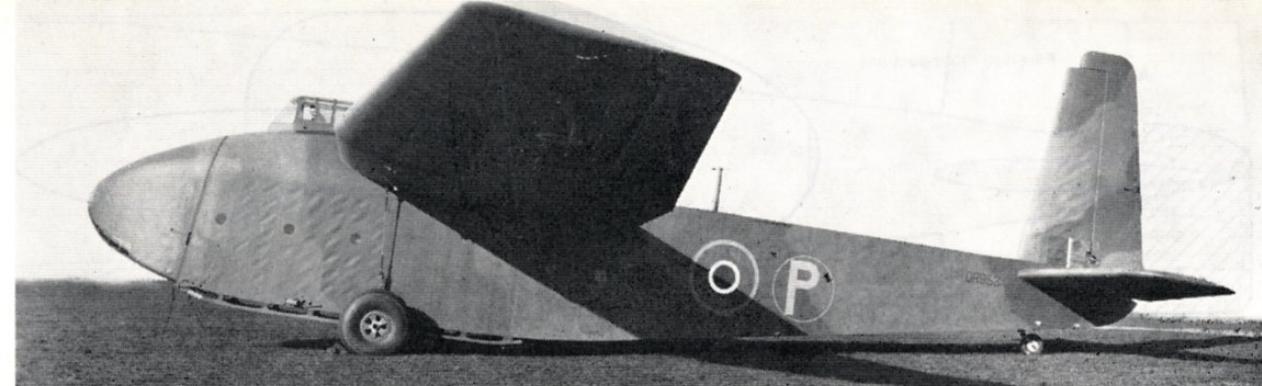


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Key to pictures: (1) Afrika Korps emblem came in various styles; this differs from that drawn for example. Typical positioning is shown on this PzKw IV but it could also be seen on the superstructure front. This example shows a contrasting background which in this case appears to be the original dark grey of the vehicle before it was repainted for desert service. (2) The XX symbol of 6th Pz Div painted adjacent to the German cross on a PzKw II, a typical position for the divisional sign. (The EW2220 number should be ignored; this is an index added to this captured vehicle for British records—EW: enemy weapon). (3) PzKw IV of 8th Pz Div with the divisional sign painted in the most common position on the extreme left of the superstructure front (arrowed). (4) Positions of divisional signs (arrowed) on rear and turret of PzKw III of 7th Pz Div, late 1942. Divisional sign was less frequently seen on turret than on hull positions shown in these pictures. (All Imperial War Museum).

AIRFIX magazine



Above: DR853 was a prototype Hamilcar Mk I and had yellow undersides. It differed in detail from production models (Imperial War Museum). Below, right: Michael Moore's splendid Hamilcar model has been exhibited and much admired at IPMS meetings. This article tells how he made it from plastic card—not for beginners, however.

Making a Hamilcar glider

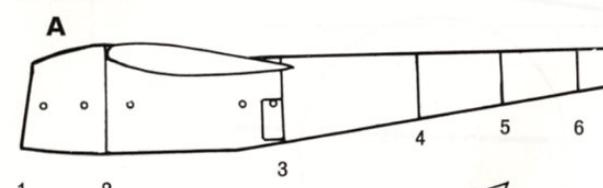
SCRATCH-BUILDING PROJECT FOR EXPERIENCED MODELLERS

BY MICHAEL T. MOORE

THE Hamilcar glider makes an imposing addition to 1:72 scale collections and is also of interest to military modellers because it was designed to carry the Tetrarch tank, Universal Carrier, or Bofors-Quad of the British Airborne Divisions in 1944-45.

For my model I used plans from *Aircraft of the Fighting Powers, Vol 5*, the best drawings of the Hamilcar I know. Few will have access to this now-scarce book, however, but Gordon Riddle has provided drawings in this issue which used these earlier plans as a starting point. A more readily available source of reference will be found in Purnell's *History of the Second World War* (Vol 5, page 2114).

The entire model has to be scratch-built, of course, and I found five different thicknesses of plastic card were necessary, namely 5, 10, 20, 30, and 40 thou. Slater's Microstrip and assorted bits of heat-stretched sprue and scrap oddments are also needed. Many modellers who have never tried scratch-building before will be put off at the very thought of this Hamilcar project, but it happens to be one of the easiest of all scratch-building subjects as far as model aircraft go. I don't commend it to absolute beginners, all the same, but anyone with a modicum of modelling experience ought to have little trouble. The main constructional steps are illustrated with sketches. Anyone who doesn't fancy plastic card modelling could still use the plans to make a solid balsa model, or perhaps a combination of balsa or plastic card.



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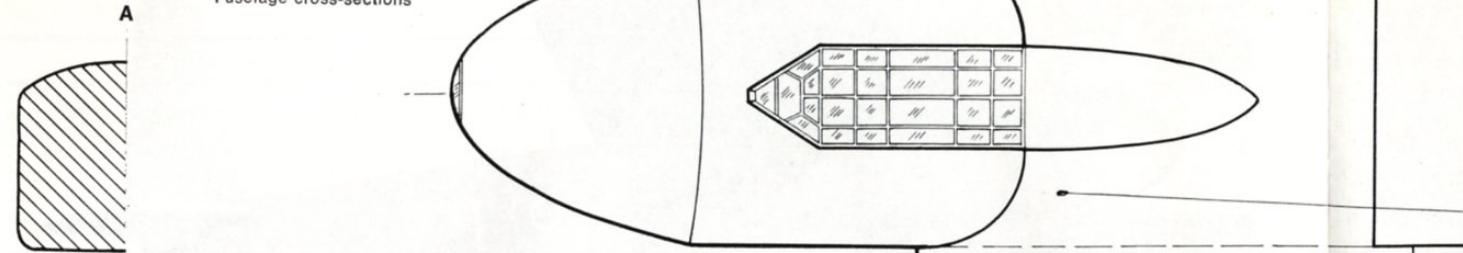
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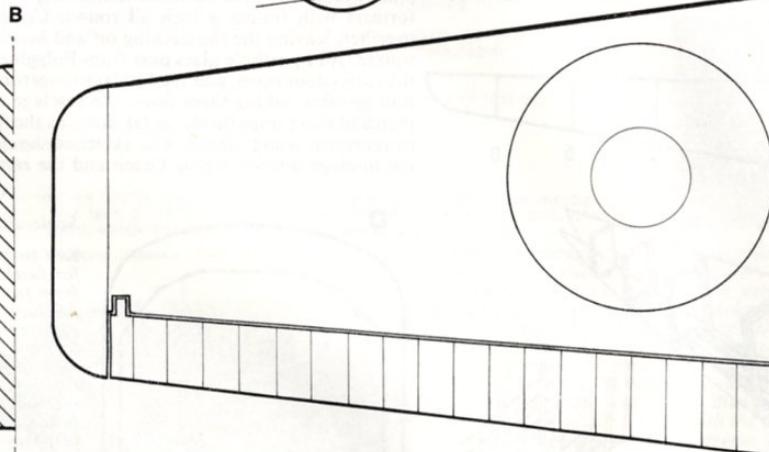
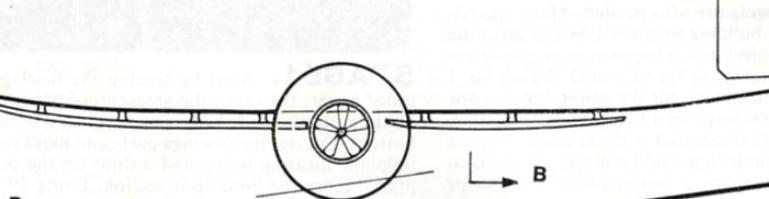
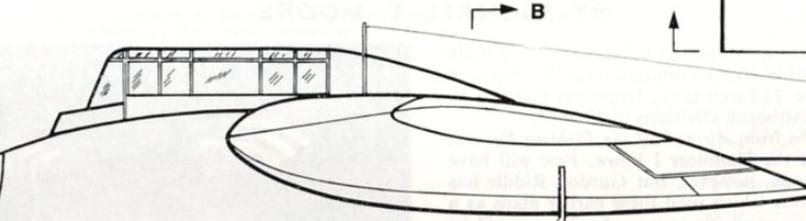
Fuselage cross-sections



General Aircraft Hamilcar Mk 1

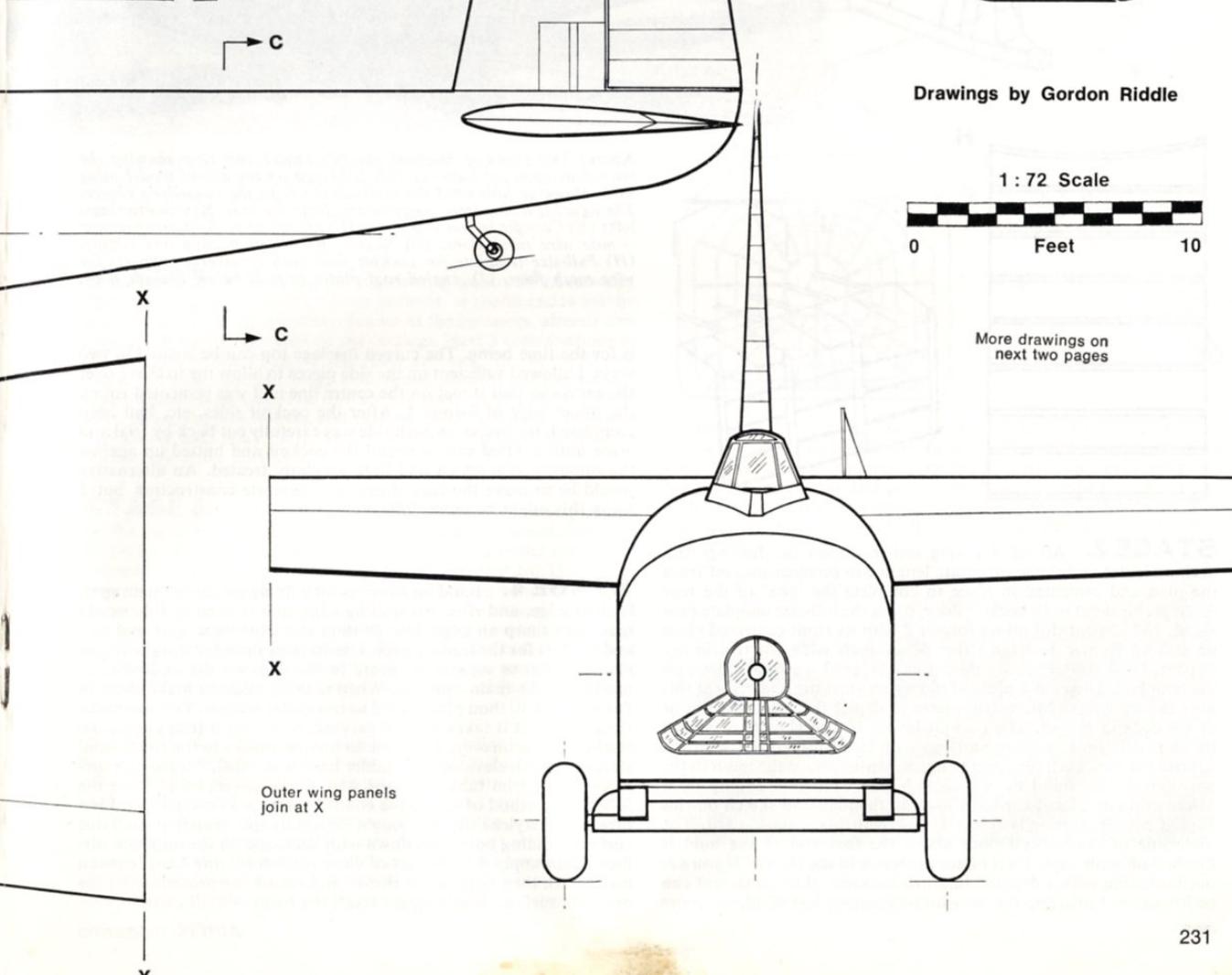
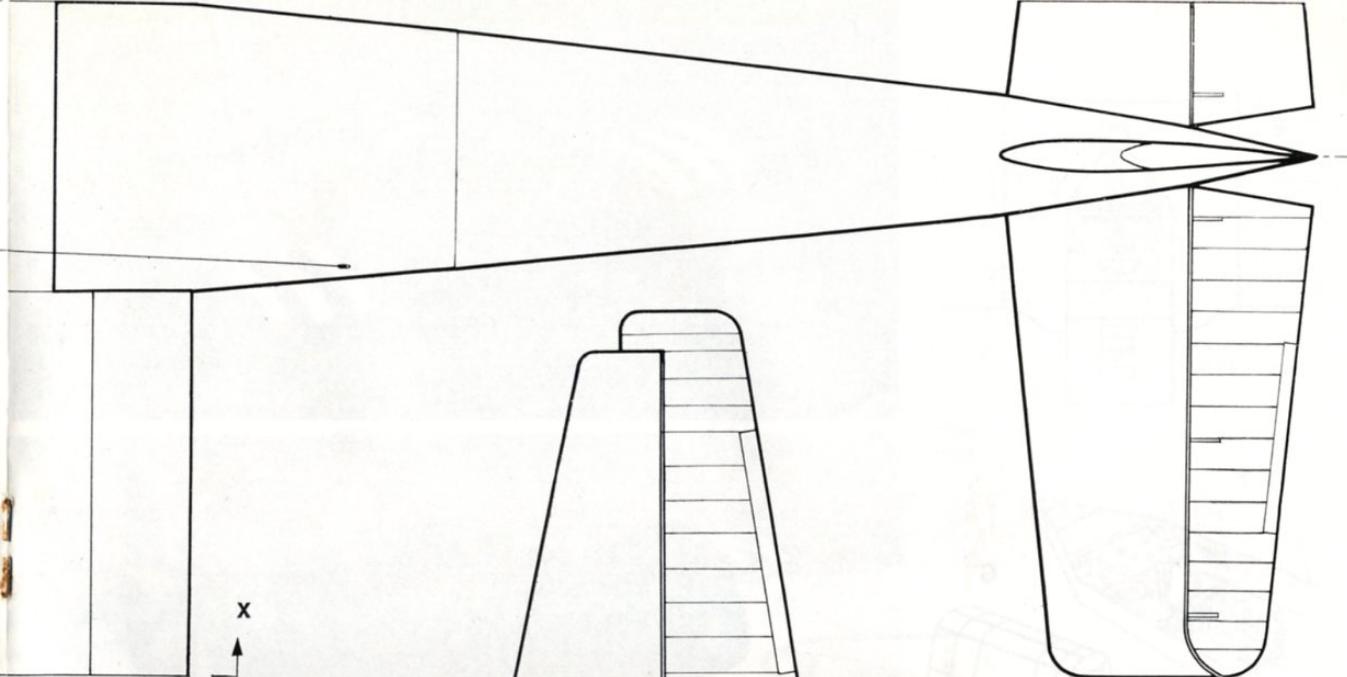


Wing cross-section at X - X
Outer wing panels join at X



B

AIRFIX magazine



Outer wing panels join at X

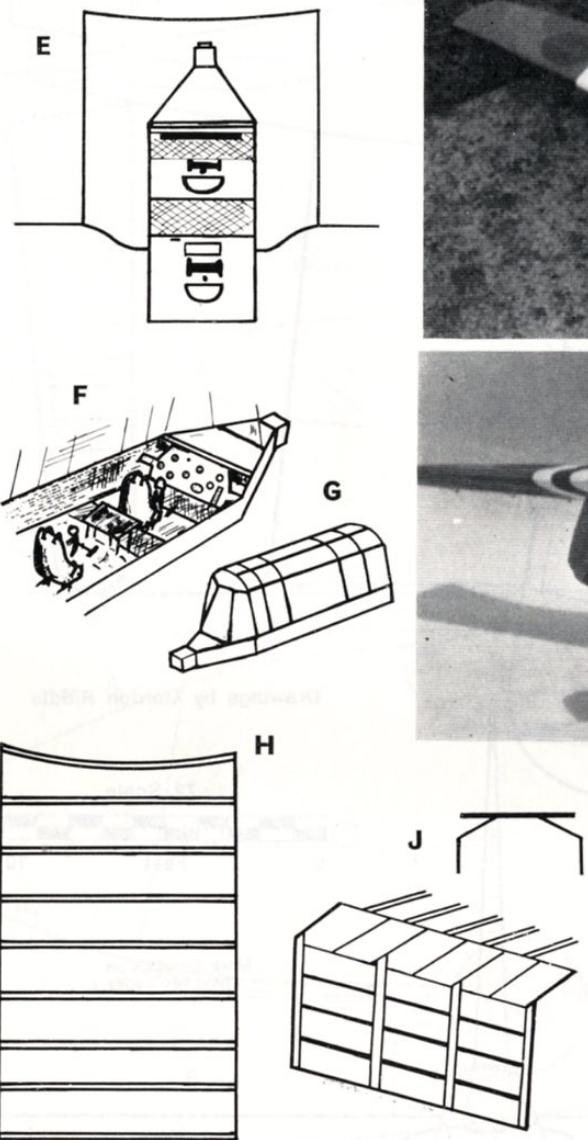
Drawings by Gordon Riddle

1 : 72 Scale



0 Feet 10

More drawings on
next two pages

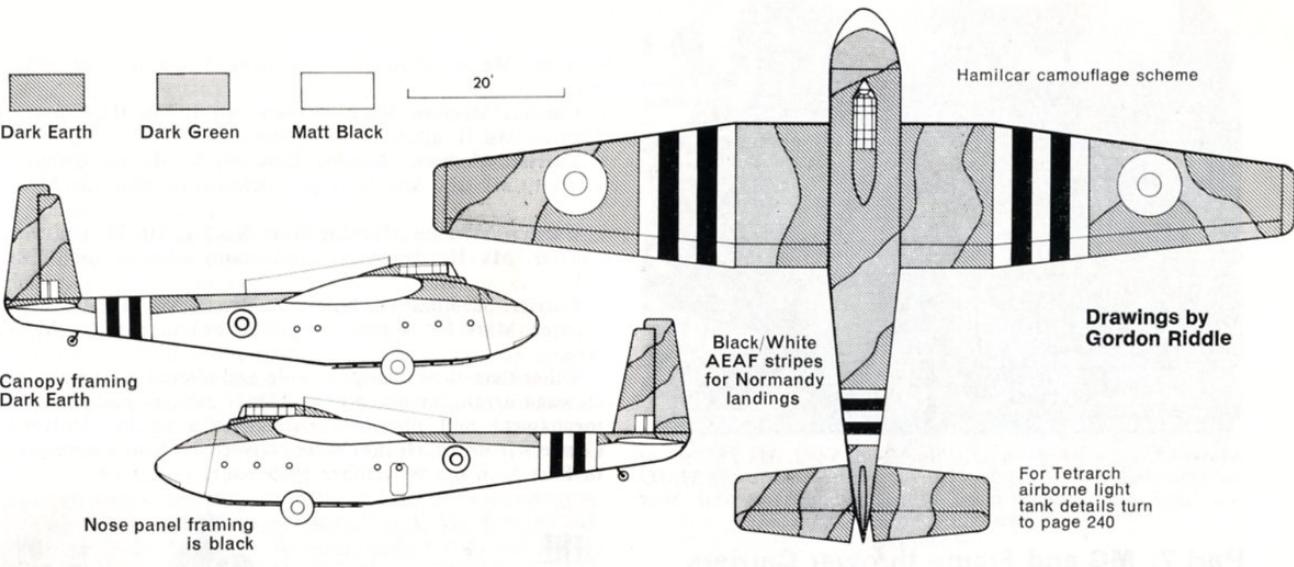
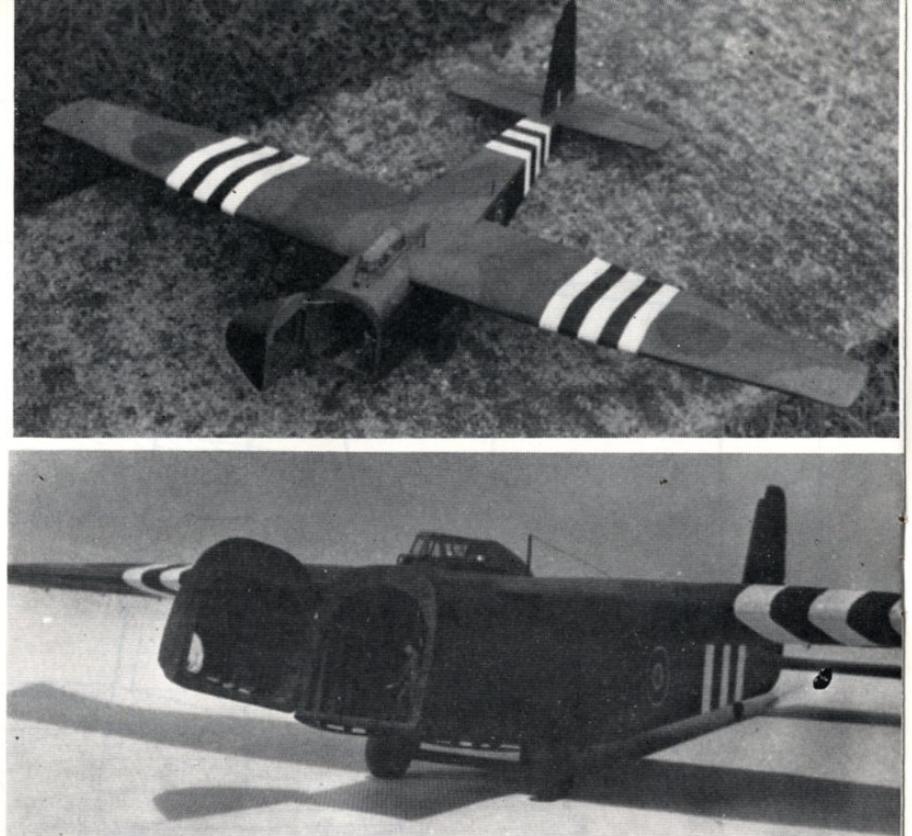


Above: Two views of Michael Moore's model, this time showing the nose door open for loading. This is hinged on the actual model using wire. However, this (and the method) is left to the modeller's choice. The figure is a converted paratrooper. Note the stay. **Key to drawings, left:** (E) Cockpit layout and floor. (F) Sketch of cockpit arrangement — note wire mesh floor. (G) Sketch of cockpit glazing and edging. (H) Full-size template for cockpit floor with transverse supports for wire mesh floor. (J) Angled roof plates in hold below cockpit floor.

STAGE 2. Aft of the wing centre-section the fuselage top decking is flat and the appropriate length can be measured off from the plan and cemented in place to complete the 'box' of the rear fuselage. Next cut out a cockpit floor, using the full-size template provided, and cement this above former 2 with its front cemented close up behind former 1. Nine strips of $\frac{3}{32}$ inch wide Microstrip are cemented transversely above this, equally spaced, again as shown on the template. Then cut a piece of old nylon stocking and cement this over the transverse Microstrip pieces to depict the wire, mesh floor of the cockpit proper. The cockpit layout is also shown, each seat (from plastic card or spare part) goes on its own platform with the control column, each platform being cemented above the mesh in the position shown. Build up the cockpit side walls and edging from Microstrip and plastic card as shown in the plan and sketch on this page. Cockpit interior is Apple Green with black dashboard. The underside of the cockpit floor above the fore end of the hold is finished off with angled top plates as shown in the sketch. If you are not bothering with a detailed interior, however, this refinement can be forgotten. I made up the 'glasshouse' canopy last of all, so ignore

it for the time being. The curved fuselage top can be treated in two ways. I allowed sufficient on the side pieces to allow me to curve over the excess so that it met on the centre line and was cemented round the upper edge of former 1. After the cockpit sides, etc, had been completed, the excess on each side was carefully cut back by trial and error until it fitted snugly round the cockpit and butted up against the opposite side which had been similarly treated. An alternative would be to make the curved top as a separate construction but I think this might be more difficult.

STAGE 4. Build up wings as for a flying model, ie, main spar, leading edge, and ribs. No trailing edge spar is used as this would make too sharp an edge. Use 30 thou sheet for main spar and ribs and 40 thou for the leading edge. Use 10 thou sheet for wing covering making ailerons separately. Score in the flaps on the underside as marked in the main drawing. When making ailerons make them in flat pieces of 10 thou plastic card to triangular section. You can make them solid but it takes a lot of carving. Score out a trim tab on the starboard aileron *only*. The same technique applies to the rudder and elevators (both elevator and rudder have trim tabs). All moving surfaces except trim tabs and flaps were fabric covered and I use the following method of giving the control surfaces a fabric finish. First take some terylene thread (bought on a reel) and wrap it around one surface (holding both ends down with Sellotape on the opposite surface). Then apply 4 to 5 coats of clear varnish (drying hard between each coat), then remove the thread and repeat the procedure on the opposite surface. If any ridges result the paint will fill them in.



Key to drawings, above: (K) Wing construction on flying model aircraft principle. (L) Method of covering wing skeleton with plastic card sheet. (M) Aileron and elevator construction. (N) Nose door former and stringer arrangement inside nose. (P) Sketch of axle construction.

STAGE 5. Cement the completed wing section to the fuselage. Then, while this is drying, turn your attention to the fin and two stabilisers. Make the fin in the same manner as the elevators, already described, and cement squarely to the fuselage. Next 3 combinations of plastic card of the required thickness are used for the stabilisers. These are made like the wings with round leading, trailing and tip edges to correct section. The ribs are not needed except at the inner ends. Returning to the wing and fuselage joint, fill in any gaps with plastic card and body putty. Then cement the rudder and elevators in their respective positions.

STAGE 6. Next make skids (two separate pairs) as per plan on the outer lower fuselage edges, and find a tail wheel from the spares box and attach in position as per plan. The under carriage is a simple axle on the two jettisonable blocks (see sketch). The wheels came from the spares box. The streamlined fairing behind the cockpit was added next. I use several laminations of plastic card, although you could use a block of balsa wood. The canopy was added next, I used flat pieces and curved pieces of Polyglaze, and butt-joined them together. Aerials are the rod or broomstick type, so two pieces of heat stretched sprue are used with a thin piece used for the wire.

STAGE 7. The nose was built up in a similar way to the fuselage, making the bottom piece shorter to allow for the glazed section. Assemble sides, then bottom, then glass (made from pieces of an aircraft display stand). Then add the main door former, and detail internally with stringers and formers. To make the top of the nose use several short pieces of plastic card to get correct shape (I used 5 pieces). Then add the rest of the stringers inside the top of the nose. If desired the nose glazing can be left to last. You can mould it, but I used pieces judiciously cut from an aircraft display stand. Nose

interior is painted green. Tow hooks are next. These are situated below the centre section $\frac{1}{2}$ inch in and $\frac{1}{2}$ inch back from the leading edge. These are just tiny pieces of plastic card. Now drill out holes for the balance horns and pitot tube. You may add the one on the rudder trim tab and the pitot tube, but leave the wing horns till after painting, as these will get in the way when you paint the invasion stripes on.



Above: The Hamilcar could also carry the American-built M22 Locust light tank which was used by the British. Here one leaves a Hamilcar during training in 1945.



Above: Carrier Medium Machine Gun No 3, Mk I*, one of the Canadian-built Universal Carriers converted to the MMG role and with added front stowage box (Imperial War Museum photos).

Part 7: MG and Flame-thrower Carriers

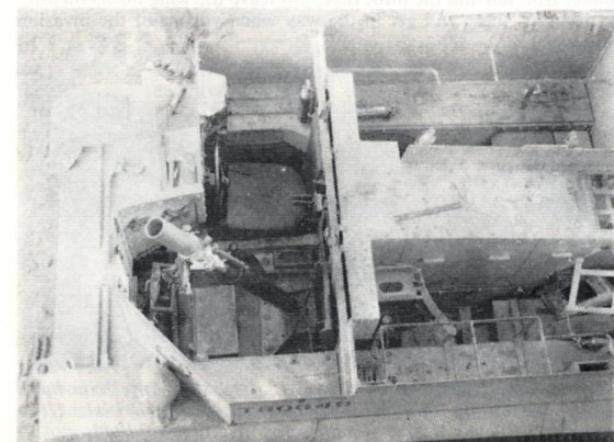
ONE serious drawback of the carrier was its lack of heavy armament, and many units overcame this by the unofficial adoption of assorted weapons. While the Vickers machine gun had been carried in the front sponson of the early Machine Gun Carriers of 1935-37 and later mounted unofficially in this fashion by some British carrier units in the war years, this type of mounting gave only a limited field of fire. When during 1943 it was decided to reintroduce the Vickers medium machine gun in the Motor Machine Gun Battalions a new arrangement was decided on. The gun was now sited behind the driver's compartment on a pedestal mount which was fitted on a strengthened engine cover. This position allowed an all round field of fire. The gun could also be dismounted and fired from a tripod that was carried stowed on the vehicle. A crew of four was carried. The various vehicles used for carrying medium machine guns (MMG) were designated as follows:

Carrier, Medium Machine Gun, No 1, Mk I: This was the original Universal Carrier, Mk I, adapted for the MMG role.

Carrier, Medium Machine Gun, No 2, Mk I: The Universal Carrier, Mk I (American production) adapted for the MMG role.

Carrier, Medium Machine Gun, No 2A, Mk I: The Universal Carrier, Mk I (American production) adapted for MMG role.

Carrier, Medium Machine Gun, No 3, Mk I*: Universal



Carrier, Mk I* (Canadian production) adapted for MMG role.

Carrier, Medium Machine Gun, No 1, Mk II: Universal Carrier, Mk II, adapted for MMG role.

Carrier, Medium Machine Gun, No 2, Mk II: Universal Carrier, Mk II (American production) adapted for MMG role.

Carrier, Medium Machine Gun, No 2A, Mk II: Universal Carrier, Mk II (American production) adapted for MMG role.

Carrier, Medium Machine Gun, No 3, Mk II*: Universal Carrier, Mark II* (Canadian production) adapted for MMG role.

Other than their change of role and altered armament and stowage arrangements, all the MMG carriers had the same mechanical and physical characteristics as the Universal Carriers from which they were converted. Details were given in Part 5, in the November 1969 issue.



Ronson and Wasp

Late in 1940 experiments were carried out with a flame-projecting cylinder that had been evolved as a static weapon for defending anti-tank ditches. This flame device, called the 'Adey-Martin Drain Pipe', was attached to the side of a carrier and tested by the Welsh Guards at Sandown Park. Further development work resulted in the prototype of what became the Ronson flame-throwing device. This was a pressure-operated equipment fitted to a Universal Carrier which featured two 60 gallon flame-fuel tanks attached to the outside rear of the vehicle, thereby allowing the carrier to retain its normal crew. The flame-gun was mounted on top of the front gunner's superstructure and the flame fuel was obtained through a flow pipe that ran along the left side of the vehicle to the rear fuel containers.

Due to certain limitations, which included the short range of the flame-projector (40 to 50 yds) and the vulnerability of the flame-fuel tanks outside the vehicle, this equipment was not accepted for service by the British War Office. The Canadian Army, however, maintained an interest in this vehicle and made arrangements for its production in Canada. Twenty of these Ronson flame devices were later sent from

Left: Mentioned last month, but not illustrated then, was the unofficial method of firing the 3 inch mortar from the front compartment. This view shows the arrangement. **Right:** Non-standard MG Carrier at Normandy, fitted with twin Vickers 'K' guns instead of the Vickers MMG.

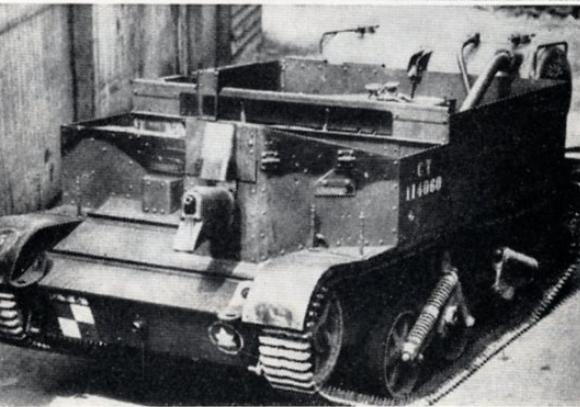
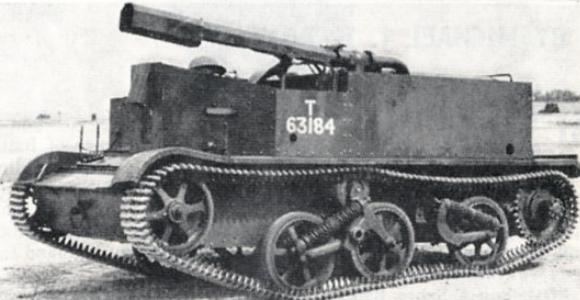
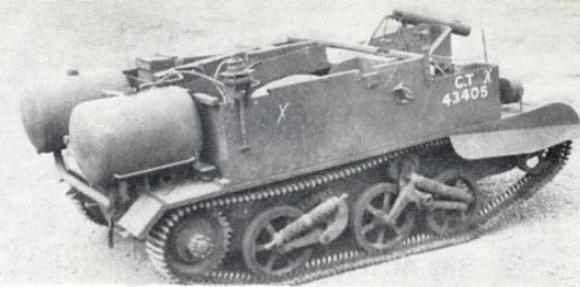


Canada to the Pacific area at the request of the US Marine Corps, where they were fitted in M3A1 Light Tanks. This equipment became known to the Americans as 'Satan'. In the meantime, further developments during 1941 and 1942 by the Petroleum Warfare Department had resulted in the first type of Wasp flame-thrower. Carriers fitted with Wasp equipment were designated as follows:

Wasp, Mk I (FT, Transportable, No 2, Mk I): In this first version produced the two flame-fuel tanks (40 and 60 gallons), pressure bottles, and connected equipment were stowed inside the carrier. The flame-projector, which was of a new design, had a range of 80 to 100 yds and was still mounted over the left front of the carrier. A crew of two was carried, the normal armament being discarded. An order for 1,000 was placed by the War Office in September 1942, production of the Wasp Mk I being completed by November 1943. Production was then switched to the Wasp Mk II, the Mk I being relegated to training purposes. Several Wasp Mk Is were equipped with swimming devices and used in flotation trials.

Wasp Mk II (FT, Transportable, No 2, Mk II): The first prototype of the Mk II was tested in August 1943 and proved to be much superior to the Mk I. The main difference as compared to the Mk I lay in the flame-projector which was of completely new design and was mounted in the machine gun housing of the carrier, making the vehicle less easily recognisable as a flame-throwing carrier. Though there was no great difference in range over the Mk I, the new flame-gun gave a better flaming performance and target effect was better since a larger proportion of the flame jet reached the target. The flame-gun also afforded increased ease of aiming, manipulation, and operation of the firing control. Elevation, traverse and depression were all increased and the gun mechanism was improved to give clean cut-off at the end of shots, thereby eliminating fire danger to the carrier. Some general re-design of the equipment reduced the weight and rendered vehicle maintenance much easier than with the Mk I. A crew of two was carried. The first formation to use the Wasp Mk II in action was the 53rd Division. In July 1944, six Wasp Mk II carriers of the 1st Highland Light Infantry were used in operations in the area of Etterville.

Wasp Mk IIC (FT, Transportable, No 2, Mk IIC): This was developed for the Canadian Army ('C' for 'Canada') and appeared in August 1944, being used by the Canadian Army in the advance to Falaise. It differed from the Wasp Mk II in that only one flame fuel container of 75 gallons was carried, mounted outside the carrier at the rear of the vehicle, thereby leaving room in the vehicle for a third man with an LMG (Bren) or 2 inch mortar. The flame-gun was of the type used in the Mk II and was mounted in the same position, ie, the machine gun housing. The Canadians had designed the Wasp IIC to obtain a combination of flame-thrower with the normal role of carrier and accepted the disadvantage of the rear mounted fuel tank to attain this. The British Army had developed the Wasps Mk I and II for the role of flame-throwing only, not requiring the use of this vehicle in a carrier role while fitted with flame equipment. Experience in France proved the Canadians to be right and the Mk IIC version came to be universally preferred. After the production programme of the Mk II was completed in June 1944, all production was changed over to the Mk IIC. Some local conversions of the Mk II to Mk IIC standards were carried out in the 21 Army Group utilising the 60 gallon tank of the Mk II equipment and mounting it at the rear. Plastic armour was also fitted to the fronts of Mk IIC Wasp Carriers in the 21 Army Group for additional protection against German 7.92 mm AP shells and 20 mm fire.



The evolution of the flame-throwing Carrier shown in chronological order. Top to bottom: Ronson fitted in a Canadian Universal Carrier. Wasp Mk I, Wasp Mk II, and Wasp Mk IIC. Differences are described in text.

By the beginning of 1945, the Wasp Mk IIC had replaced the Mk II in 21 Army Group. It became widely used and most infantry battalions were issued with six Wasps Mk IIC. By the end of the war the Mk IIC had been accepted as the standard British carrier-borne flame-thrower. Three Wasps were sent to Russia for evaluation in February 1945.

SABRE BATTLE

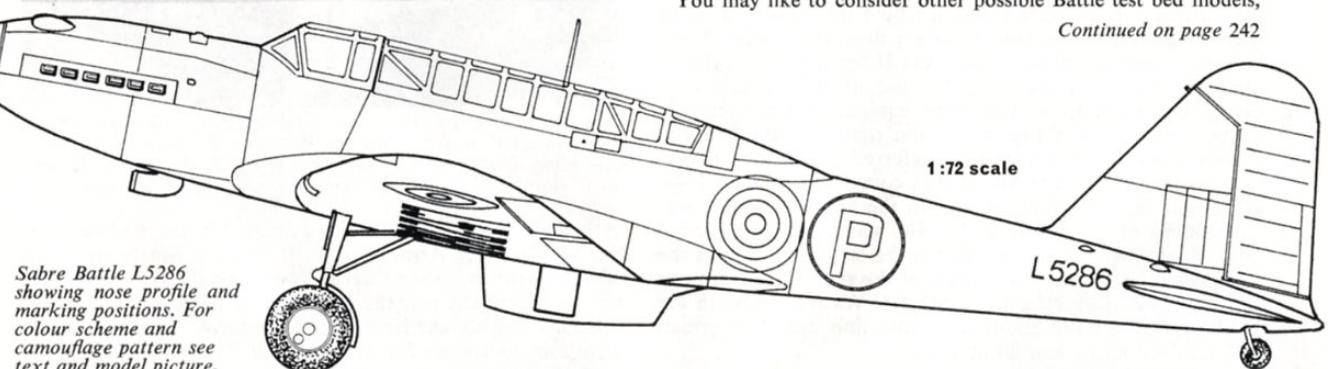
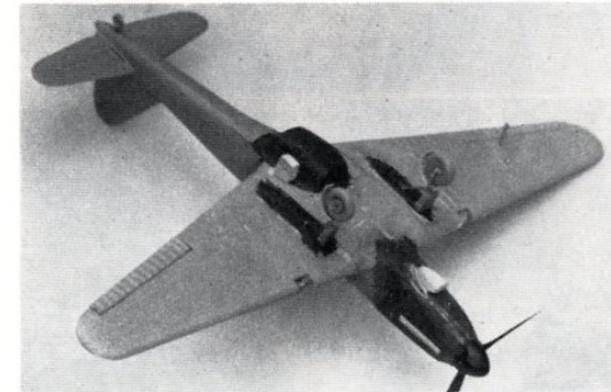
'Test bed' conversion from the Airfix kit

BY MICHAEL J. F. BOWYER

MENTION has already been made of the wide possibilities presented to the kit converter of making a range of Battle test beds. I chose the Sabre Battle as a straightforward addition to my model collection. In my choice I was a little biased for the Sabre Battles were once a frequent sight for me. They were slow noisy creatures - the Sabre was a very raucous engine - and seemed bulky aeroplanes, although nothing like those massive Folland test beds with which they did their rounds.

Modelling a Sabre Battle is a simple and straightforward job. I assembled the fuselage as prescribed in the kit instructions except that I did not fit a floor to the pilot's cabin. Neither did I put in the instrument panel.

I cut off the entire nose along a line from the wing root to immediately adjacent to where the windscreen would fit. The nose I replaced by a wooden one cut roughly to shape. This was stuck into position with polystyrene cement, and when it was firmly stuck in place I completed the shaping of the nose. I then faired it into place with Humbrol body putty. Two small fairing bulges appeared on the cowling of the real aircraft, easily modelled with body putty sanded to shape. Over the entire nose I put a coat of matt Humbrol enamel, sanded it, repainted it and sanded it again. This gave quite a satisfactory finish to the balsa nose. The exhaust stacks I shaped from the strips of plastic sprue which enclosed the propeller in the Battle kit. A wooden air intake was carved and stuck beneath the nose.



Sabre Battle L5286 showing nose profile and marking positions. For colour scheme and camouflage pattern see text and model picture.



As suggested in the Battle Profile in our September 1969 issue, a Sabre Battle makes an attractive but not difficult conversion from the Airfix kit. This picture shows the Sabre Battle L5286 in the finish reproduced on the model (Imperial War Museum).

I then filed away the bulge beneath the fuselage for in its place one needs to place the bulky radiator, the sides of which are upright. I fashioned the radiator from a block of balsa sanded and twice painted before being added in the correct position. The radiator will need fairing into position where it joins the aircraft, using a little plastic wood or putty. By its side I fitted a dummy oil cooler, again made from a piece of wood, though plastic scrap could be used.

Next I attended to the wings and undercarriage. On the Sabre Battles the latter was fixed, so I filed away the rear fairing cones. In the wheel wells are fitted rough blocks of balsa carefully faired into place with putty the whole smoothed into the wing contours. As an alternative you could use plastic card inserts here. The undercarriage oleo legs and wheels are assembled as for the normal Battle. I forced them into small holes in their usual positions, and fitted a pin to each leg as a bracing strut. Mudguards supplied with the kit are too thick, so I discarded these in favour of two cut from thin card bent round a pencil.

The remainder of the Battle can be completed in accordance with the kit instructions. The spinner needs revision however, to a more pointed shape. I used a propeller from a Lancaster kit left over from a Manchester conversion. This is not entirely perfect because the propeller diameter needs to be a little greater, but the difference is hardly noticeable. The spinner can be filed more pointed as required.

Painting is equally straightforward. The finish for these aeroplanes was dark earth and dark green in the usual 'forward sloping' manner. Under surfaces were training yellow, and they carried Type A roundels and large serials in black. On the fuselage I applied Type A1 roundels from a Defiant kit as these are much superior to those supplied in the Battle kit. Fin flashes I also used from the Defiant. Of course, others now on the market would do equally well.

A 'P' prototype marking is on the Yeoman/Hales RAF transfer sheet (available from Jones Bros or Berwick) and also in the Letraset range. The only alternative is to paint it by hand.

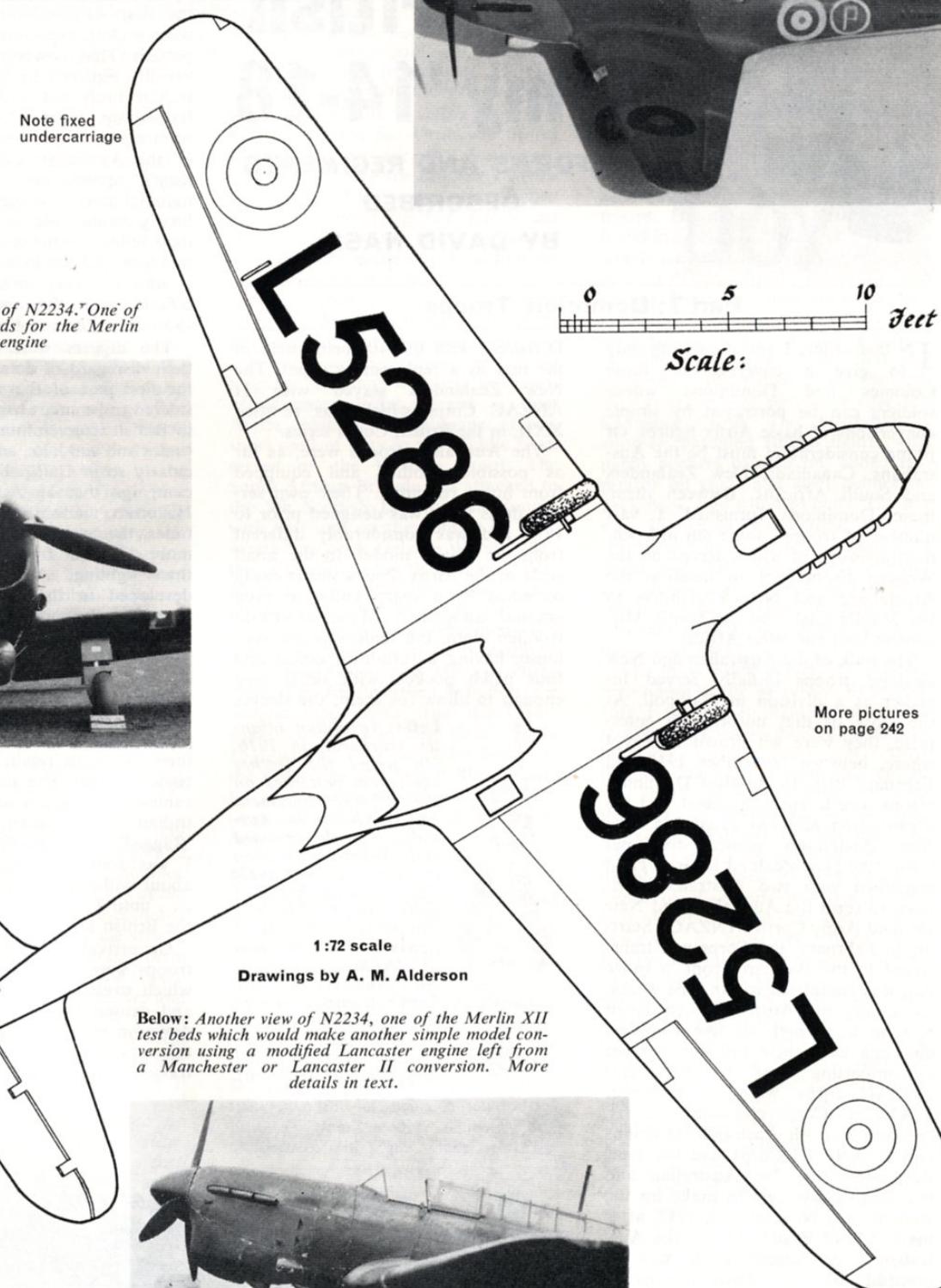
Upper wing roundels on the Battle were 54 inches in diameter, so those with the kit need to be replaced by correct size Type B roundels. Under the wings they were the same size.

The fuselage and wing serial numbers can be added in Indian ink. I could find no available transfers of the correct size and style. With all this done I felt I needed a sound track to make the model more realistic!

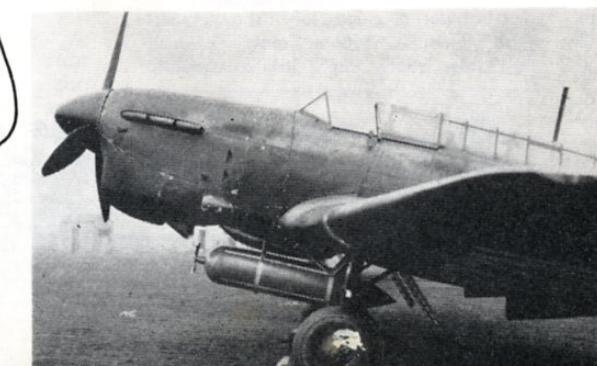
You may like to consider other possible Battle test bed models,

Continued on page 242

Right: Michael Bowyer's conversion shown after painting, with the standard dark earth/green pattern easily discernible. Picture on opposite page shows unpainted model with structural changes displayed.



Below: Another view of N2234, one of the Merlin XII test beds which would make another simple model conversion using a modified Lancaster engine left from a Manchester or Lancaster II conversion. More details in text.



More pictures on page 242



The British Army '14-18

UNIFORMS AND REGIMENTS DESCRIBED

BY DAVID NASH

Part 7: Dominion Troops

In this article I am attempting only to give a coverage of those Colonies and Dominions whose soldiers can be portrayed by simple conversions of basic Airfix figures. Of prime consideration must be the Australians, Canadians, New Zealanders and South Africans. Between them, these Dominions furnished a vast number of troops—some ten independent divisions of which served on the Western Front—not to mention the Australians and New Zealanders in the Middle East, and the South Africans in East and West Africa.

The bulk of the Australian and New Zealand troops initially served together as a division in Gallipoli. At the close of that unfortunate enterprise, they were withdrawn to Egypt where, between November 1915 and February 1916, the total of Dominion troops rose to such an extent that the organisation required expansion. The New Zealanders gained divisional status (the New Zealand Division) and combined with two Australian divisions to form the Australian and New Zealand Army Corps (ANZAC). Starting in February, the Corps was transferred to the Western Front, a move that was completed within nine weeks. Eventually the Australian contingent rose to a strength of five complete divisions with their full complement of supporting arms. By 1917, two ANZAC corps were in existence; I ANZAC Corps contained the 1st, 2nd, 4th and 5th Australian Divisions and II ANZAC Corps had the New Zealanders; the 3rd Australian and two British divisions to make up the strength. On November 1, 1917, after the Battle of Passchendaele, the Australian Expeditionary Force was regrouped into the Australian Corps containing the 1st, 2nd, 3rd and 5th

Divisions, with the 4th being held in the rear as a replacement depot. The New Zealanders stayed with II ANZAC Corps which was re-titled XXII, in the British Corps series.

The Australian troops were, as far as possible, clothed and equipped from home resources. Their own service dress tunic was designed prior to 1914 and was considerably different from the British model. In the small scale of the Airfix figures this is easily remedied by a sharp knife, or even ignored altogether. Made of khaki woollen cloth, the tunic was cut very loose, having a turndown collar and four patch pockets with skirts long enough to allow for them; the sleeves

Left: Australian infantry (corporal) in 1916. He wears the leather equipment patterned on the 1908 web equipment and produced in Australia. Note the buttoned cuffs. **Below:** Australian infantry in France, 1917. They wear the buttoned cuffs but British web equipment. This is a Lewis gun section and the 'Number Twos' of the guns carry spare Lewis drums in canvas satchels. Note the officer in 'other ranks' uniform (Australian Official/Imperial War Museum).



were buttoned tight on to the wrist. A bronze badge, a rising sun, was worn by all ranks on both collars. In 1914, the first AEF troops seem to have worn a cloth cap similar to the British pattern. This, however, was soon universally replaced by the famous Australian bush hat with the left side looped up. In the 3rd Division, the brim was unlooped until the formation of the Australian Corps, whereupon they immediately conformed to national style as a sign of approval at finally being able to fight alongside their fellow countrymen. Officers wore this bush hat but in other respects had a uniform very much like British officers, with the open-necked tunic showing collar and tie.

The 'diggers' were conspicuous for their disregard of dress regulations. In the first part of the war it was considered to be smart to dress unofficially in British issue clothing, principally in tunics and sun hats, and this was particularly so in Gallipoli. It was of that campaign that an Australian Official Historian made the remark that at times the standard uniform seemed more like kit for swimming rather than fighting. As *esprit de corps* developed in the Australian formations, they began to cling to their distinctive clothing, but again in 1918, they had to resort to British garments.

At that time a reported deficit of 11,000 hats and 12,000 jackets existed and the troops were noted for their raggedness, presumably because of their desire to retain their own patterns of dress. The situation was well summed up by an anonymous Australian infantryman who wrote: 'Ragged? Yes I should say that I was. I was four days at Pozières going about without a seat to my breeches . . . until I wangled a new pair from the British lines.'

On arrival in France, the ANZAC troops were issued with hide belting, which stretched as soon as it got wet and caused the heavy packs to sink down on their backs. Needless to say, this was soon discarded in true Australian style, as soon as the British



Above, left: A general service wagon and a limbered wagon (with the rear limber 'dropped' as was common) made by Chris Ellis from Airfix wheels and Civil War Artillery parts, plus plastic card, using last month's drawings as a guide. **Above, right:** Three types of Dominion figure all converted as described in the text. They are a New Zealander, an Australian and a Canadian Highlander.

1908 pattern equipment could be scrounged.

The New Zealanders were basically uniformed in a British style. Their distinguishing feature was a slouch hat, the same as that used by the Australians. At first this hat was dented in the crown, but later, to distinguish them from the Australians, the crown was raised to a peak with three or four dents rather like the traditional Boy Scout hat. This hat is admirably shown on the heads of the Airfix US Infantry, the Americans also wearing this style of 'campaign hat' until 1941. The puggaree (cloth) around the base of the hat was coloured to denote the branch of the wearer: a khaki puggaree with a blue centre line for engineers, green for mounted rifles, red for infantry and white for Army Service Corps. A blue puggaree with a white line was worn by the artillery and blue with red edges by the Army Ordnance Corps.

The first Canadian contingent, which eventually became the 1st Canadian Division, landed in England in September 1914. Continual re-inforcements from the Dominion eventually led to the formation of four infantry divisions and an independent cavalry brigade. A separate Canadian Corps was formed in September 1915.

The Canadian forces were uniformed in the British style, highland units wearing the Scottish doublet. The tunic, cap or Glengarry, kilt apron or trousers and puttees, were coloured khaki. Buttons were gilding die struck, except in rifle regiments who had them blackened. Officers wore the open-necked tunic with collar and tie, and the cuffs were decorated with $\frac{1}{2}$ inch chevron lace. Official Canadian dress regulations show distinctive shoulder straps on the officer's tunic, but it seems likely that the colours listed below were, in fact, only used on greatcoats, as in the British Army. The colours were as follows: $\frac{1}{2}$ inch cloth edging around the strap, coloured yellow for cavalry, scarlet for infantry and white for Army Service Corps. A dark blue edge with scarlet centre loop, passing around the button for artillery, this scheme being reversed for engineers. White edging

with an inner loop of yellow for Army Pay Corps, red for Ordnance Stores Corps, maroon for the Veterinary Corps and cherry for the Army Medical Corps. Most troops were issued with the Oliver leather equipment when in Canada, this being exchanged for the 1908 pattern web equipment upon arrival in England.

Apart from numerous supporting units, the South African raised three brigades, each of four battalions, for overseas service. Two of these brigades, together with ten regiments of Mounted Rifles, served in East Africa, whilst the 1st Brigade, after a short spell of duty in the Middle East, served on the Western Front. The South African Brigade was attached to the 9th Scottish Division and fought with that unit on the Somme in 1916, where they took Delville Wood, today the site of a South African War Memorial. In 1918 they were transferred to the 66th Division. The four component battalions were numbered 1 to 4. They were wartime formations, only loosely connected with peacetime units. The 4th (Scottish) Battalion, for instance, was drawn from the Transvaal Scottish and the Cape Town Highlanders; they wore the badge of the latter and the Atholl Murray tartan of the former. Their styles of dress corresponded with those of the British Army.

Models

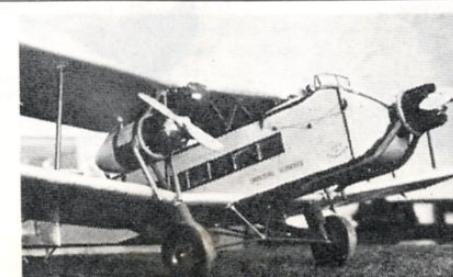
The Airfix US Infantry figures can be used quite well as they are for New Zealanders, though you really need to score their leggings to depict puttees and their accoutrements must be altered to British pattern as described in previous articles. For Australians the same figures can be used, this time with cuffs trimmed to depict the fastenings and the hat trimmed off at the crown and left brim. A new looped brim is then needed from a tiny crescent of stiff paper. Once again the

web equipment must be altered and added to.

As an alternative to altering the US figures, the 1914 British may be used as a basis for conversion to ANZAC troops. The models illustrated show a marching New Zealander who is simply the marching British figure with an American head replacing the original head and added detail, including a gas respirator on the chest from a square of plastic card and a helmet on the back pack. Note that the puggaree is painted to depict the arm of service, in this particular case the Ordnance Corps. The Australian is another marching British figure, with patch pockets painted on, added respirator on chest and steel helmet on back pack, and trimmed cuffs. The hat was fabricated by cutting off the British cap at the forehead, adding a paper disc, and replacing the original cap crown upside down and slightly trimmed to style. Then the paper brim was cemented in the 'looped up' position on the left.

The third figure depicts a Canadian highlander of the Manitoba Regiment, 16th Battalion, in fighting order and shows a very simple method of making highland troops from 8th Army figures. The area between the legs of the shorts is simply filled in with Plasticene or plastic padding to form the kilt and kilt apron. Then the arms are trimmed to form sleeves, and the doublet is depicted by a further thin smear of Plasticene or even a thick coat of paint. When Plasticene is used, however, it must be 'fixed' with Banana Oil (available from art shops) before painting. Though I have not yet tried it myself, the new Airfix Waterloo Highlanders look perfect for conversion to 1914-18 Highlanders. Just trim off the 'wings' from the shoulders and the sporrans. Then add helmeted 8th Army heads or cut the existing bonnet down to depict a glengarry or Tam o' Shanter.

Left: Reader S. E. Brett of London SE4 made this fine 1:48 scale Imperial Airways Argosy City of Coventry from balsa, plastic card and scrap parts. Balsa was mainly used for the wings, plastic card for the rest. Interior is fully detailed.



THE TETRARCH AIRBORNE TANK

PAYOUT FOR THE

HAMILCAR GLIDER

BY KENNETH M. JONES

THIS vehicle is an ideal subject for a first attempt at scratch building for the beginner, or for any aeromodeller who has or is building the Hamilcar glider and wishes to depict one of its many loads. The hull being very angular and free of cast armour helps us considerably on this project. Provided that the plan is read correctly and you cut your parts out accurately you should not experience any trouble whatsoever, and have an attractive little vehicle to add to your collection. If you successfully completed the Japanese Type 95 (March 1969 issue) with its rounded armour, the Tetrarch should come very easy to you. Even the turret—which to many modellers is the hardest part to build—is not much of a problem. In this article I shall dwell more on the construction of the vehicle's turret than I did in earlier ones, as most beginners have difficulty with this part.

As I stated above the hull is straightforward enough, although a little care is needed with the engine compartment side-plates and hull backplate. Mark out the hull side plates, bottom, frontplate, glacis, top (after drilling for the turret pivot pin), engine decking and side plates, and back plate on to 20 thou plastic sheet. Emboss any rivet detail required before cutting out as this stops the card from 'curling' as it would if the cut out part itself was embossed at the edges. Hold the card up to the light with the marked out parts on it and trace their locations as a guide on the reverse side to indicate where to 'rivet' the

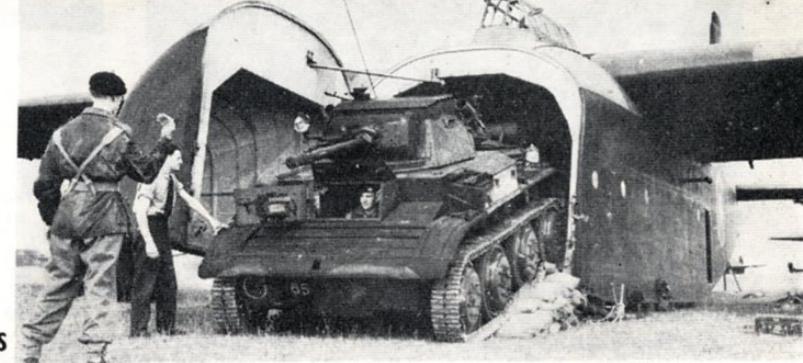
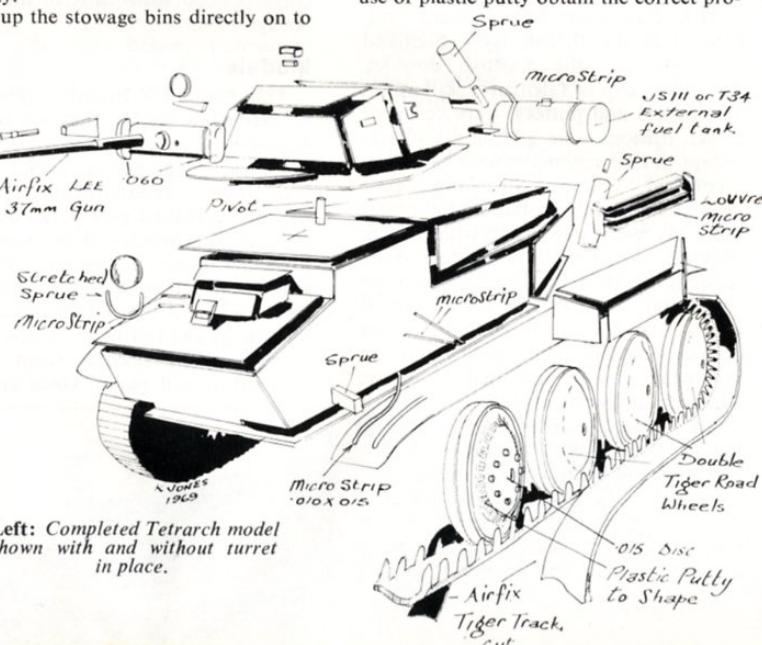
Build up the stowage bins directly on to

the trackguards face by face, starting with the sides and finishing with the tops. The engine louvres can be fitted next. These are best made from Microstrip of the appropriate dimensions; alternatively they can be cut from plastic sheet. The driver's 'cab' can be added next and you should spend a little time in detailing this part as it is a prominent focal part of the model. Build it by facets as you did the stowage bins, cutting out a separate front 'oven door' and detail with hinges and vision slot. Don't forget the side vision slits. The hull spot lamp and exhaust silencers can be added at this stage. It is not worth going to the trouble of making curved pipes from the silencers to the hull sides as these will be obstructed or hidden when the running gear is fitted.

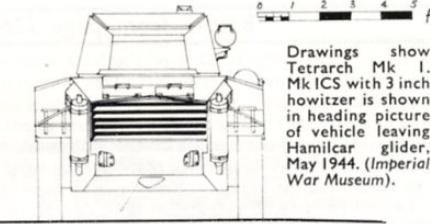
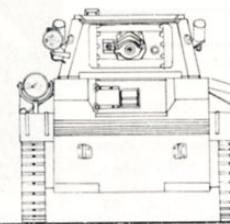
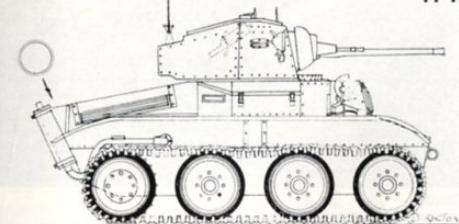
The road wheels are next. I used Airfix Tiger wheels—sixteen flat ones are required—suitably modified. File smooth any detail on both surfaces of the wheels and cement them together in pairs. Tube cement would be the best to use for this job, applied liberally—but don't overdo it—and allowing the excess to run out on to the perimeter. When they have dried out sand smooth to give them a perfect finish. The cross-section of the wheel shows that the centre part forms outward from the rims. The easiest way to achieve the correct look is to cement a .015 thou plastic card disc over the outer side of the wheel and by use of plastic putty obtain the correct pro-



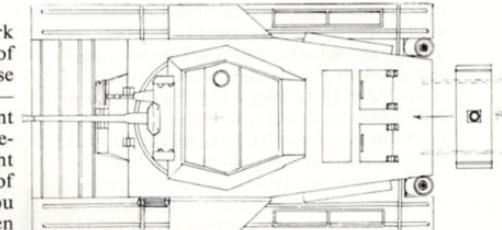
Left: Completed Tetrarch model shown with and without turret in place.



1:76 Scale



Drawings show Tetrarch Mk I. ICS with 3 inch howitzer is shown in heading picture of vehicle leaving Hamilcar glider, May 1944. (Imperial War Museum).

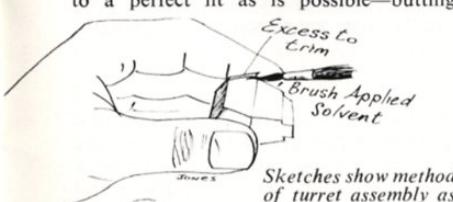


file. Then sand smooth when dried out. The rather prominent wheel nuts on the roadwheels would be best embossed on to the card disc before cementing the same in place, not as I did them, by cutting up pieces of stretched sprue! This is a time wasting operation, tedious too, in 1:76 scale, but was necessary in my case as I forgot to emboss them on the card discs to start with.

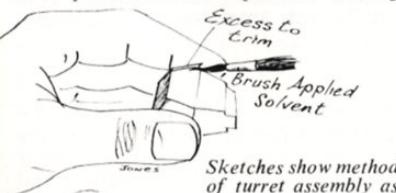
To mount the wheels to the hull I used square section sprue which I had in my scrapbox. I cut this diagonally to mount the wheels with their outer surfaces in line with the outboard edge of the track-guards. There are many other methods of achieving this but this is one of the simplest. When you have cemented the wheels into place align the assembly upon a perfectly flat surface. A mirror is excellent for this task to make absolutely certain that all wheels are square on the ground.

The tracks can be adapted from the same source as the wheels, the Airfix Tiger kit. Cut the track away on either side of the teeth, this should give you the approximate width required for the Tetrarch. Cut to size and fit them to the model, but only after all other construction is finished and the vehicle is painted. It is important that any plastic parts coming into contact with tracks of this type have a good coat of paint due to the adverse effects it has on untreated plastic. At this stage you can finish the hull detailing, ie, engine hatches, rear grille etc before building the turret.

The turret should be no problem if you tackle it logically. Firstly mark out on to 20 thou plastic card the base of the turret from the plan view of the vehicle. Note that the rear 3 mm or so is raised about 1 mm, this is evident from the side elevation. Cut a centre brace from .020 sheet in the shape of the turret profile from the side elevation of the plan—allowing for the plastic card thicknesses as you do so—and cement it along the centre line of the base plate. Again use a setsquare to check the vertical positioning. Cut out the turret frontplate from .020 plastic sheet after marking out and embossing the rivets if required. Cement this into place—it must be as near to a perfect fit as is possible—butting



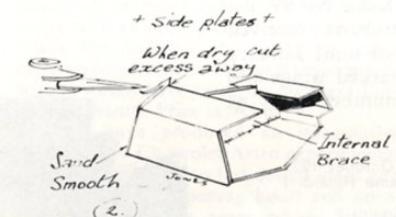
Sketches show method of turret assembly as described in text.



January, 1970

against the base and centre brace. Mark out the two forward sloping top parts of the turret on to .020 sheet and cement these into place next. Mark out on .010 sheet—larger than the actual part—the two front sidewalls. If you take the three measurements from the front plate, baseline, height from base to top and allow an excess of about 1 mm on the other dimensions you will have a safety margin to play with when you cement the part in place.

Emboss the rivet detail on the reverse side of the sidewalls—well within your 1 mm allowance and cement with liquid solvent into place on the turret. Don't use too much solvent as it will melt the thin plastic sheet or craze the surface. Press into position and hold it with the fingers—which should be free from cement, etc—until the solvent dries. This does not take long. When dry trim off the excess with the modelling knife—a very sharp or even new blade is advocated here—using a 'shaving'



effect to trim. Do not scrape the excess away and use sandpaper only when there are any 'high' portions to erase.

Next stage is to cut the rear sloping top and stepped parts from .020 plastic sheet and cement them over the former. At this stage you will notice—if you are successful so far—that the turret construction is becoming remarkably easier as we progress. Similarly cement the turret rear plate and undercut cross members into their respective positions, checking for alignment. For the rear sideplates, the procedure for the front ones is repeated. There must be a perfect butt joint between this and the front sides, so take the dimensions of this with top and base leaving an excess as before to the rear for final trimming. It only remains to sand any 'high' spots before adding finishing details and the pivot pin.

The mantlet is made up in three parts as shown on the exploded view, the two 'shoulders' from 60 thou sheet and the centre from 20 thou sheet suitably contoured. This part is fairly straightforward and does not need detail description. The Besa MG mount can be cut from 60 thou plastic card if you have not one in your scrap box or a spare from a kit. The

machine gun barrel is from stretched sprue, or, if you use the whole lot complete from an Airfix Churchill, you have the barrel and mounting. For the 2 pdr main armament I used the 37 mm gun from the Lee/Grant kit. With the recoil housing cut away it is a fair representation of the Tetrarch's 2 pdr QFSA. Four inch smoke dischargers are optional, if you omit them then you should fit their mounting brackets. The turret spotlamp and vision blocks along with the semicircular plate on the front lower can be added at this stage. A single turret periscope can be made from scrap. I made this from a small 'block' of 40 thou plastic card with a Microstrip protector formed around a small piece of dowel. Any final touches can be carried out before painting the model, ie, stopping any small gaps up with filler, and adding trackguard supports, external fuel tank, towing rings and any spare equipment.

I painted my model with the excellent Humbrol dark green from their military vehicles range. These paints are in my opinion one of the best on the market and I would strongly recommend them for this job. One coat of dark green was sufficient, the paint being very intense in colour. I painted the red-white-red recognition markings by hand, although Almarks produce these stripes which are readily adaptable if you cut them to size. The number T-9274 appears on the front plate and turret—left side only—also hand painted. Most modellers will be familiar with the Profile on the Tetrarch by Peter Chamberlain and Chris Ellis which will give alternative finishing details. Depicted in the centre spread by James Leech is a very attractive finish for a Mk ICS of the 6th Airborne Reconnaissance Regiment, for those who wish to substitute the 2 pdr with a 3 inch howitzer.

The Tetrarch was also used by the Russians so those who delight in building dioramas have plenty of scope using Airfix Russian Infantry. Alternatively what a lovely airfield scene could be created with a Tetrarch being loaded into the Hamilcar glider model.

Battle—from page 236

none of them difficult. One of the least known was that flown to test the Rolls Royce Merlin XII. This is a simple matter once one has decided to rob a Lancaster of its engines to make a Manchester or Lancaster II. The Lancaster power unit needs to be cut diagonally to the rear immediately aft of the side intake. The exhaust stack must be cut away and in its place the more usual manifold fitted. An additional fairing needs to be put in place aft of the new power unit and the braced cylindrical tank can be fashioned from wood. The remainder of the Battle can be completed as given in the kit instructions. The original had the serial N2234 and was delivered with Type B roundels on the fuselage sides and above the wings. The paint scheme was dark green, dark earth and matt black. White under-wing serials were carried.

K9222 the Exe Battle suggests itself as another conversion subject and again it is only the nose that needs modification. The configuration is illustrated as a guide. Type A1 fuselage roundels need to be applied and a rudder serial too.



Bombing Colours—from page 223

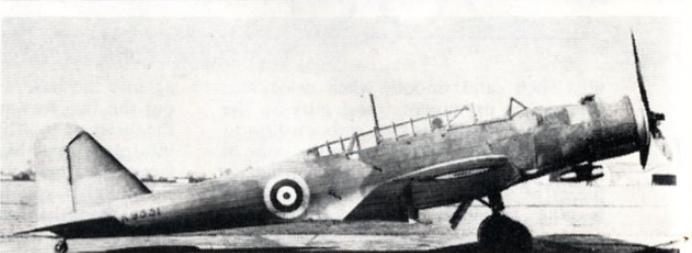
introduction of serials under the wings, to be white on Nivo finishes in $2\frac{1}{2}$ feet characters. In practice, however, on bombers, they were painted twice that size. Since No 99, the first squadron to be equipped with Hyderabads, received them in April 1926 and No 10 Squadron not until January 1928 on re-formation, only No 99 had unmarked wings and only for a short period. The range of numbers was as follows:

Serial Nos	Type	Remarks
J6994	Hyderabad	Prototype flown from October 1923
J7738-7752	Hyderabad	J7741 and J7745 became Hinaidi I
J8317-8324	Hyderabad	Ordered in 1926
J8805-8815	Hyderabad	J8809 converted to Hinaidi I
J9031-9036	Hinaidi I	Ordered in January 1928
J9293-9297	Hyderabad	Ordered in June 1928
J9298-9303	Hinaidi I	Ordered in June 1928
J9478	Hinaidi II	Prototype Mk II
K1063-1078	Hinaidi II	Ordered in September 1929
K1909-1925	Hinaidi II	Ordered in October 1930

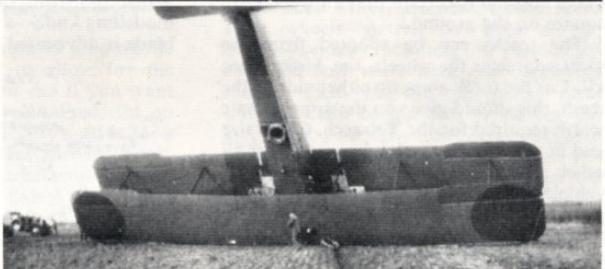
News from Airfix—from page 214

missile—the existing Airfix item, in fact—which makes a typical combat load for the big Hercules. Other military loads which can be carried by the RAF Hercules include the Ferret, Fox and Saladin armoured cars, and Scorpion light tank. We published an accurate scale drawing in our November 1967 issue showing the correct RAF Hercules colour scheme. For the benefit of new readers we will be re-publishing this in our next issue. Complete with RAF transfers, the Airfix Hercules costs 19s.

CAPTAIN SCOTT'S famous ship *Discovery*, which still remains in service with the RNR, moored at the Thames Embankment, is the subject of the annual Airfix 'Classic Ship'. This vessel was used on Scott's first polar expedition of 1902-4 and was built in 1901. Later she was sold to the Hudson Bay Co and was also used as a supply ship during World War 1. From 1923 she became a research ship, and in 1937 became a Sea Scouts' training ship. Now preserved, she is open to visitors daily but she is still in service as a



Top: Slightly more ambitious conversion would be the Exe Battle which is shown here. K9222 had black undersides, dark earth/green upper surfaces, Type A1 fuselage roundels, and the serial repeated on the rudder. Above and left: Two views of another possible conversion subject. K9331 fitted with a Taurus engine. Note the pre-war (left) and wartime (above) finishes of the aircraft, the wartime brown-green-yellow scheme not incorporating under-wing serials. Such was usually the case on prototype aircraft, or trials machines which were painted in this finish. K9331 pre-war had Type A fuselage roundels and rudder serials.



Above: Roundels of red and blue were painted at the wing extremities as well displayed by this upturned Hinaidi of No 10 Squadron, J9300. The pilot, the sole occupant, escaped injury but not admonishment
NB: First production batch of Hyderabads initially had tail fin and rudder shape as prototype illustrated.

HQ ship. Pre-formed ratlines and moulded sails are provided in the usual way and there are over 200 finely detailed parts reproducing virtually all the upper deck and mast detail. Complete with instructions and transfers, the kit costs 21s 6d.

COMPLETING the Boeing 'family' of jet liners in the Airfix range comes the Boeing 737 in 1:144 scale, a neat little kit complete with Lufthansa markings. It follows the usual Airfix airliner style whereby a punch is provided to pierce the tiny porthole openings in the transfer trim line. Completed model has a $7\frac{1}{2}$ inch span and 8 inch length. Price is 5s.

NEWEST Airfix car kit to 1:32 scale, priced at 3s 6d, is a fine replica of the 1933 Alfa Romeo 8C, one of the great classic sports cars of the 'thirties. It has a fully detailed chassis and coachwork and comes complete with driver and lady passenger in 'thirties style dress.

NEW KITS AND MODELS

PRAIRIAL FIGURES

FROM Argyle Models, 247 Argyle Street, Glasgow C2 we've had samples of an interesting new range of 1:32 scale (54 mm) figure kits which are obviously aimed at the same market as that enjoyed by the well-known Historex firm. Known as the Prairial range, the kits issued so far happily don't conflict in subject matter with Historex and seem to be concentrating on the British side at the Battle of Waterloo which is all to the good as Historex cover the French and Allied nations extensively. Three subjects are at present available and these can be purchased in any of several different forms. The Duke of Wellington is produced 'Resting', 'In order of battle', 'Watching from his horse', 'Before the battle', 'With hat under his arm', 'Watching through a lorgnette', 'With his hat in his hand', or 'Studying plans of the battle'. Our sample was the latter. The last four mentioned are foot positions and the first four are mounted positions. Each kit has many parts in common but other components are altered appropriate to the action described. Second subject is a 42nd Highlander who can be had in different kits as a mounted officer, officer on foot, sergeant, private, pioneer, standard bearer, drummer, or piper, our sample being the latter. Finally there is a horse which is available rearing, shying, trotting, or walking, a choice of four different kits.

At first glance the kit parts could be mistaken for Historex mouldings, though on close study we conclude that they do not quite come up to Historex standards, but there is not much in it. By any judgment the moulding is good. There is an excellent instruction sheet in English, but what is outstanding is the full colour painting sheet provided with the figure (but not the horse) kits. This is magnificent and almost worth the cost of the kit in the case of the highlander. It covers all the variations for each of the eight different highlander kits—and incidentally it also makes a good reference for the Airfix 00 size Highlanders. Each kit is individually boxed and the figures are priced at 12s each with the horse at 11s. You need the horse, of course, if you buy a mounted figure as it is not otherwise included. A phial of cement and tape for belts and sashes, etc., also comes in each kit. Argyle Models hold stocks of these attractive kits and can supply by post, postage extra. C.O.E.

TAMIYA FIGURES

TO go with their growing range of 1:35 scale tank kits, Tamiya have now introduced two sets of scale figures. These are very good indeed and beautifully moulded in hard plastic so that conversions offer no trouble. One set features a German tank crew in the standard panzer crew uniform and consists of a seated figure and two standing figures, all with separate arms. In effect you have a driver, commander, and gunner for one tank, but you could, of course, split them between more than one tank if you only have one or two hatches open on your model. One set of arms holds binoculars and the two standing men have headsets. The variations

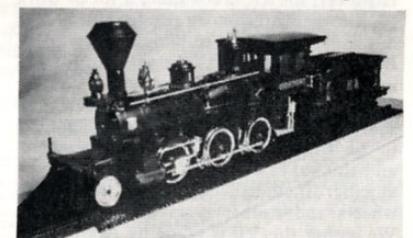
LATEST CARS
SEVERAL new die-cast model cars have come our way for review lately and pride of place goes to a truly magnificent January, 1970

possible with the set are almost endless for a keen figure converter. Good colouring details for these figures can be taken from our recent series of 'Panzer Uniform' articles. The set is priced at 3s. Second set features four infantrymen in helmets. Three are moulded complete, but the fourth, a machine gunner has separate arms. There are two perfect little MG 34s with bipods, an ammunition box, two spare arms, a SMG, four spare helmets, tiny helmet transfers, and separate bayonet scabbards for each man, so figure converters will find the set well worth having. They are slightly smaller than the Airfix 1:32 scale Germans but go with them satisfactorily as men of smaller stature. This set costs 3s 9d. Jones Bros of Chiswick sent our review samples and can supply postage extra. C.O.E.

STEAM LOCOMOTIVE

A NEW plastic locomotive kit is enough of a rarity to cause a stir in any railway circle and it matters little if the model is Japanese. Actually the prototype of this 'Benkei' model was built in the USA and is typically American in outline with cow-catcher, huge smoke-stack chimney and large fully enclosed cab, but the locomotive was built for use in Japan.

The kit is Japanese and one of a series of five kits portraying transport in the Japanese



Meiji era which, judging from the locomotive, dates from 1880. A leaflet enclosed in the kit illustrates others in the series including a horse-drawn state coach, a delightful horse tram, rickshaw, and a boat of vaguely gondola appearance. Apologies for the vagueness but the descriptions of these other kits are in Japanese characters. The illustrated kit instructions for the locomotive are in English and were perfectly easy to follow.

The model is to the odd (by model railway standards) scale of 1:50 and the track gauge measures 23 mm. The kit is therefore unlikely to interest motorising enthusiasts with working layouts and in fact it is designed as very much a static model. For example, the outside motion, pistons, connecting and coupling rods are

Continued on next page

PSL BOOKS FOR MODELLERS

fighting colours

RAF fighter camouflage and markings 1937-1969

fighting colours

RAF fighter camouflage and markings 1937-1969



MICHAEL J F BOWYER

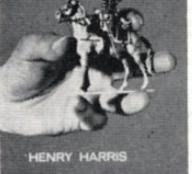
By Michael J. F. Bowyer

Michael J. F. Bowyer, well-known contributor to 'Airfix Magazine', details the development and changes in camouflage and markings of all Royal Air Force fighter types from 1937-1969 and lists the serial number allocations of every RAF fighter ever flown in that period. He records comprehensively how RAF colours altered over the years, against the background of contemporary events. Each chapter is illustrated with detailed line drawings depicting specific aircraft in typical markings of the period, with 139 individual drawings in all. In addition to 157 excellent photographs, there are exhaustive appendices giving precise data on all RAF fighter types since 1937. 192 pages, 8½" x 5½", case bound. (35s net)

HOW TO GO COLLECTING MODEL SOLDIERS

By Henry Harris

HOW TO GO COLLECTING MODEL SOLDIERS

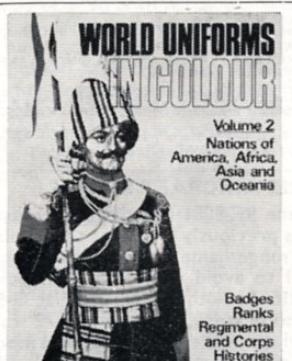


HENRY HARRIS

The definitive work, by an acknowledged military expert, on how to make the most of your collection. This, the third in the popular 'How To Go' series of books, covers choice of scales, displaying models, developing 'themes', and conversion ideas as well as surveying the history of the different arms. Gives advice on how to plan a model army from first principles and how to amass the men and materials for a serious collection. There are more than 70 superb photographs and an interesting chapter on wargames by Donald Featherstone. As well as a foreword by Brigadier Peter Young, there are eight instructive and fact-packed appendices featuring lists of manufacturers, societies, abbreviations and museums. 200 pages, 8½" x 5½", case bound. (35s net)

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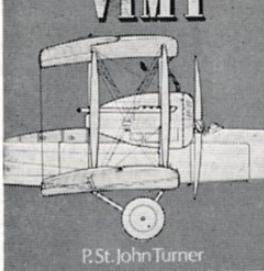


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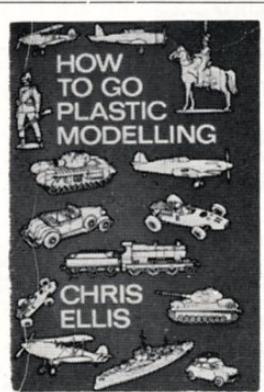
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By P. St John Turner



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By Chris Ellis

Editor of AIRFIX Magazine

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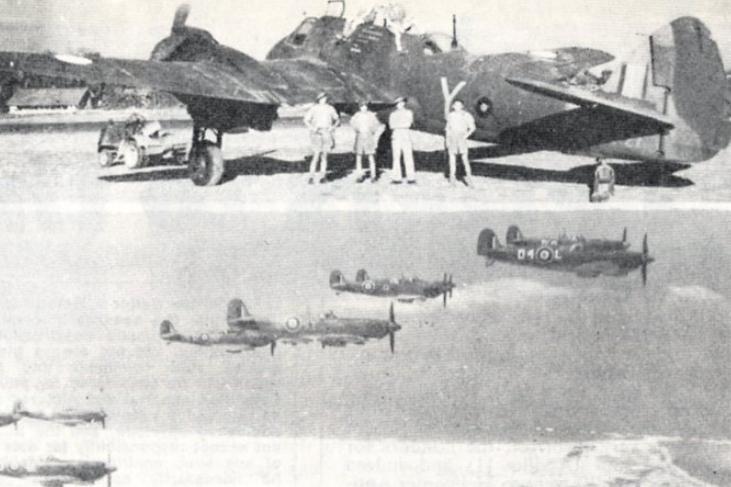
More rare pictures from readers with captions by Michael J. F. Bowyer. A free Airfix kit is awarded for every picture published, but please note that there is usually a delay of some months before publication due to the limited space at our disposal.



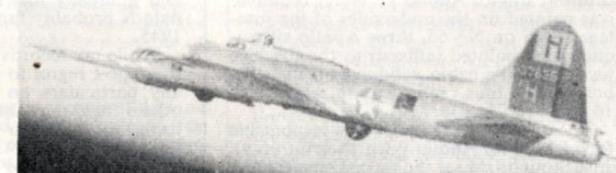
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Letters to the Editor

Wrong Chopper

JUST received the November edition of AIRFIX magazine and thought I'd like to draw your attention to a very grave error concerning the photograph of an SH3 'Sea King' (page 108). This states that helicopter 2710:65/AV was responsible for picking up Apollo 11 astronauts. This of course is very incorrect, the honours for this 'pick up' (Apollo 11) and indeed Apollo 8 and 10 went to Helicopter Anti-Submarine Squadron 4 (HS-4) and to the pilot of No 66 Cdr C. B. Smiley, USN. This was in fact 2711:66/NT. Also a note of interest to the modeller is that helicopter No 66 of HS-4 for the Apollo 10 pick up carried the words 'Hello Dere Charlie Brown' (with two eyes painted above this caption) and for Apollo 11 'Hail Columbia' was painted on the undersides of the fuselage. Also on No 66, three Apollo silhouettes were painted (affixed) to the fuselage just below the cabin windows on the starboard side thus representing Apollos 8, 10 and 11.

The aircraft you showed was responsible for picking up Apollo 9 (earth orbit only). Just thought I'd set the record straight.

Joseph T. Thompson, Nuneaton, Warks.

Thanks also to the many others who wrote to correct us!—EDITOR.

Halifax facts

DU TO our somewhat isolated location here on the other side of the world your excellent magazine takes several months to reach us. However, if it is not too late I would like to comment on the photograph of a Halifax which appeared on page 421 of Volume 10, issue 9.

While I agree with Mr Bowyer that the photo depicts a B Mk II Series I Halifax (R9430) I would dispute the date quoted. I have two other photographs of this particular Halifax and since they also show the port aileron still unpainted I feel it is reasonable to assume that they were taken within a reasonable time proximity to the photograph in your magazine. The gentleman who provided my shots stated that they were taken around late 1942 or early

Letters to the Editor selected for publication
entitle the senders to each receive a free Airfix plastic construction kit of their choice. We are always pleased to receive your comments and pictures, which will be considered for publication. Submitted material and pictures can only be returned if accompanied by a stamped addressed envelope, and the Editor cannot accept responsibility for safe keeping of any such contributions, neither does he necessarily agree with comments expressed by correspondents in the letters columns. Please note that any letters anticipating a reply MUST be accompanied by a SAE or stamp.

1943. The aircraft was flying on one engine at the time. I hasten to add deliberately, and gradually lost height. I feel that this date is probably far nearer the mark than 1945.

While my records are fairly extensive on the type I regret to say that I do not have any particulars on this Halifax; however others from the same production batch do have very similar histories. The code letters identify R9430 as having belonged to 78 Squadron, or its Conversion Flight, as also did R9373, R9391 and R9434. With few exceptions the early B Mk IIs in the 'R' serial range do not appear to have remained in squadron service much beyond August 1942. 78 Squadron put up a maximum effort for the first 1,000 bomber raid of 30/5/42 and only one Halifax from the 'R' serial batch, R9373, was included among the 22 dispatched.

Most appear to have been transferred to the Heavy Conversion Units, the first four of which formed in 1942. The large '19' carried by R9430 is an HCU coding and it most probably served with 1658 HCU which absorbed 78 Squadron Conversion Flight in September 1942.

The retention of the tall radio masts and the nose turret date the photograph as not later than mid-1943 at the outside. (Even training units had their Halifaxes retrospectively modified!) My comments of course refer to the general service Halifaxes. There were a few machines retained for various experimental duties which retained the full B Mk I Series I configuration as late as the end of 1943.

K. A. Merrick, Elizabeth North, Australia.

Shunter's truck

IN the November edition of AIRFIX magazine, Norman Simmons states that Great Western shunter's trucks were limited in use to the larger yards such as Swindon and Cardiff, and that most small town stations usually modelled would not have use for one.

I would disagree on this point as I know of at least five small goods yards on the Birmingham to Stourbridge line, and several others in the area, where they were used. These trucks were often coupled to 0-6-0 diesel shunters during the decline of steam, but to various classes of pannier tank engines previously. (It should be noted that the 57XX class were restricted by a blue route classification, which prohibited it from use on lightly constructed

lines.) It would appear that these trucks were used as little more than mobile tool boxes, or convenient places to store the workmen's lunch.

I would, however, like to say how much I appreciated Mr Simmons' conversion. Perhaps we can hope to see more conversions for unusual wagons to follow, particularly those of the Great Western.

Franklin Lloyd, Warley, Worcs.

Waterloo details

THANK YOU Airfix very much for the Cuirassiers. They took their time coming, but they were worth it. However there are a few errors. The set is advertised as the 'Waterloo' series, but in 1811, the Cuirassiers were issued with carbines; thus they wore carbine belts with cartridge pouch—these are omitted. In 1805 they were issued with red plumes which are also omitted. Furthermore the Cuirassier holding his horse has no coat tails and is the only one with the scabbard. Admittedly the Cuirassiers discarded their scabbards when charging up the slope at Mont Saint-Jean for the last time but . . .

Michael Rust, Soberton.

Information wanted

COULD any readers give me some information about a crash-landed Boeing B17-F-30DL *Aliquippa* of 407th Bomber Sqn, 92 Bomb Group, USAAF?

The aircraft crash-landed near Bornebroek, Holland, on 22-12-43. The sqn code was PY, the individual letter Q. Three or four men left the aircraft after landing. Is there anybody of this former crew living in Great Britain or USA? The aircraft was returning from a raid on Osnabrück, Germany. The Boeing must have taken off from RAF Podington. I do hope somebody can help me in finding the crew.

Peter van Bolhuis
Willem Klooster 31, Almelo,
Holland.

Anyone who could help, please contact Mr van Bolhuis direct.—EDITOR.

He III conversion

AS AN asthmatic I cannot get outside to the fullest. Reading your excellent magazine and making your models take up most of my time when I am sick.

Referring to your He III conversion (January 1969) I have found that the upper transparency can be taken from a Revell Condor, then converting the latter into the recce version.

Geoff Addison, Mosman Park, Australia.

Seafire squadron

HAVING recently returned from the USA I have just started reading AIRFIX magazine and enjoy it very much. Your 'Photo Page' is excellent. Those old snapshots, even the ones that are of poorer quality, are of great interest to modellers and historians alike.

I am writing with reference to the September issue, photo No 2, of the Seafire III, LR817, P-SH on HMS *Ravager*.

I believe, but am open to correction, that the aircraft would be of 887 Sqn, and that



Difficult to believe, but these exquisitely detailed models of famous London buses are to the diminutive 1:76 scale (4 mm to 1 ft, OO gauge). All are scratch-built, needless to say, and the Superquick buildings in the background confirm the scale. All the tiny lettering is by hand. Reader Bernard King of Teddington, Middx, made and photographed them in a setting reminiscent of Kingston-on-Thames town centre! From left to right: RT class in 1947 finish, STL of 1936, 1930 ST (in LTPB finish), LT class of 1930, and another view of the STL.

the date would be about late spring or early summer in 1944. HMS *Ravager* was a CVE-type carrier and was used solely for training. As far as I can ascertain, 887 Squadron did not see much action until Autumn, 1944. Therefore it is logical to assume that the photo was taken when 887 were training with their new Mk III's earlier in the year. It is also probable that the squadron was not based on the carrier but flew-on for practise landings.

Ted Hooton, Hampton, Middx.

Wound stripes

THE splendid article 'The British Army '14-18' by David Nash in your August issue brought back many memories of those far-off days.

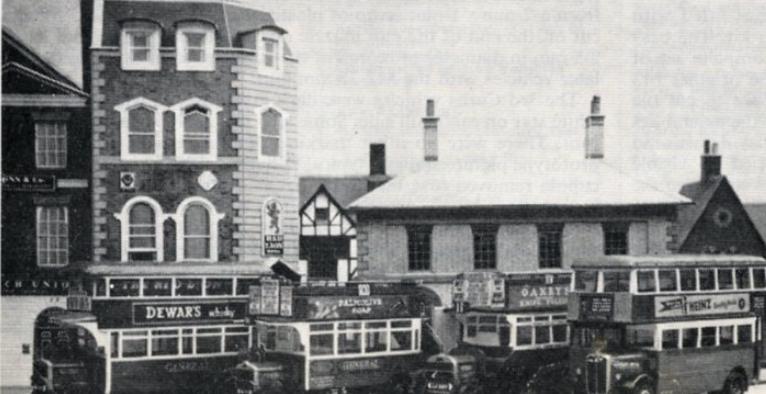
In the centre column on page 539, Mr Nash mentions 'small blue inverted chevrons, indicating years of good service were sewn on the lower left sleeve, and small red ones, indicating wounds, just below them'. These chevrons were sewn on the lower right sleeve, the red one indicating active service in 1914, with a blue chevron above the red for each year of active service after 1914.

Wounds were indicated by a 2 inch gold stripe on the lower left sleeve, and service, or good conduct stripes, were in the form of inverted NCO's chevrons, also on the lower left sleeve, one for 2 years' service, two for five, and three for 12.

Mr Nash is quite correct about the respect accorded to the wearers of the goat-skin coats. This respect also applied to those wearing the little red 1914 chevron. In 1918 there were many men in France with two, and three wound stripes, and some with four. I look back, with great pride to my service, as a very young soldier, alongside those fantastically brave and steady veterans who had come through

Below, left to right: More bus models by Bernard King, an LGOC NS of 1925 in later style with covered upper deck and pneumatic tyres, LGOC K class of 1914, LGOC B class of 1910, and LGOC STL of 1932 shown in LTPB livery. The latter is not to be confused with the standard-bodied STL shown above.

All models have detailed interiors.



the terrible Ypres battles, the Somme and Paschaendale.

I do hope Airfix will, one day, bring out sets of British Infantry, and other arms of the service, in the full dress of 1914. In the meantime, congratulations on your excellent magazine.

Frank P. Blackbourn, Middlesbrough, Yorks.

David Nash writes: Mr Blackbourn is perfectly correct on the question of wound and service stripes and I am happy that the record should be set straight by a veteran of these times.

Cuff titles

MAY I firstly offer my congratulations to Martin and Dick Windrow, for their excellent series of articles on German Tank Crew Uniforms.

However, with reference to the final article on the Afrika Korps, a few words of explanation on the cuff titles are needed.

The early pattern, which was instituted on July 18, 1941, was in fact a formation designation, and was worn on the right cuff, as stated in the article. However, the second design, instituted on January 15, 1943, was in fact the official insignia, rated as a campaign medal, and was worn on the left sleeve of any uniform. Veterans of the Africa campaigns wore this insignia right up to the end of the war.

V. Mattocks, Birmingham.

Apollo tips

I HAVE just finished building the two new Airfix models, the Apollo Lunar Module and Apollo Saturn V which were released just in time for the Apollo 12 flight to the moon.

I have only one criticism to make about the lunar module and that is, the ladder (part 6) has ten rungs and on the real thing it only has nine; also it is placed too low on the landing leg.

Below, left to right: More bus models by Bernard King, an LGOC NS of 1925 in later style with covered upper deck and pneumatic tyres, LGOC K class of 1914, LGOC B class of 1910, and LGOC STL of 1932 shown in LTPB livery. The latter is not to be confused with the standard-bodied STL shown above.

All models have detailed interiors.

The Saturn V rocket is a really great model and to the scale of 1:144 can be used in conjunction with the 1:144 scale airliners. I do not like the way in which the rocket is meant to be fixed to the base because I don't think many people want to cement this on, and if they don't the model falls over at the slightest touch. I fixed mine by gluing four pieces of dowel to the base which fit up inside the nozzles of the four rockets on the first stage. When the model is placed on the base then, it has less of a chance of falling over. An even better idea is to make a scale model of the gantry and then attach the rocket to this, as on the real thing. I am going to do this as soon as I get the measurements of it.

One more thing is the way the Command module and escape rocket are fitted together. On my model this was a very loose fit and they kept falling off, but I fixed this by putting a very small piece of Plasticine on the pin which fixes the Command Module to the Service module and on the pin which fixes the Escape rocket system to the Command Module. This holds it quite steady. If you don't want to do this you can always cement it all in one piece but it is much more realistic to have them separating. Apart from these small details I think Airfix have brought out a fantastic new series and I hope we will have many more of these models.

Stephen Anderson, Swindon, Wilts.

Making cowlings

ALTHOUGH I am a keen modeller of Airfix kits and have made a good number I also like to make scratch built 1:48 scale 1914-18 aircraft models from Polystyrene sheet. In the past I have had trouble making engine cowlings for these aircraft. This has now been largely alleviated by my 'find' and I would like to pass on this information to all 1:48 scale scratch build enthusiasts.

The centres of the large rolls of Butterly brown paper gummed tape are now made from polystyrene and these when filed to shape make excellent engine cowlings. They are plenty thick enough to be turned down if need be for the sticklers for spot on accuracy.

Peter R. Little, Borrowash, Derby.

Mr Little sent us a convincing sample cowling made in the way described. Aside from 1:48 scale aircraft, this idea also seems excellent for some larger 1:72 scale models.—EDITOR.

THE Miniature Armoured Fighting Vehicles Association (MAFVA) are now producing a revised version of their magazine under the name *Tankette*. Litho printed, this is packed with features of interest to tank enthusiasts. Subscription is 30s a year. Further details from the Hon Sec, G. Williams, 15 Berwick Avenue, Heaton Mersey, Stockport, Cheshire.



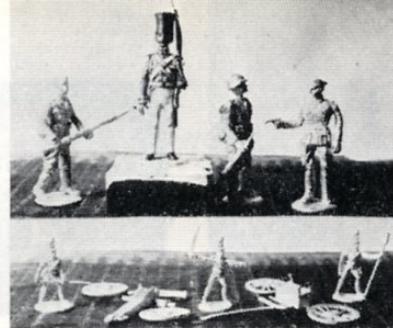
Above: Glimpse inside the Hamilcar should be useful for anyone following our Hamilcar and Tetrarch articles elsewhere in this issue. View forward is taken from just aft of the port side door (Imperial War Museum).

New Kits—from page 244

for anyone interested in derivatives) comes in twelve pieces and is very easy to assemble. The head position can be varied to give an open or closed mouth.

The plastic is a mottled purple brown colour and some research is needed to get the actual colour of the beast, although the box lid depicts it being green.

There are eight monsters in the range and they are undoubtedly useful for instruction. In fact they would fit very well into a diorama of the prehistoric world, especially for schools. Our sample was supplied by Jones Bros of Chiswick who have a stock of them. Price is 9s 2d. B.L.



Top: German infantryman with forage cap, Indian sepoy, German with helmet, all to 1:32 scale. Above: Three artillermen and components of field gun and limber kit in 20 mm (00) size. All by Douglas Models.

THE new firm of Douglas Models, whose first products we reviewed recently, have now introduced more lead figures as

illustrated left. In 54 mm 'standard' size at 1:4s 11d each come German World War 2 infantrymen with forage cap or helmet, a German SS officer with revolver, and an Indian sepoy of the Indian Mutiny period. The SS officer comes in one piece and the others with separate arms, etc, so that a small amount of positional variation is possible. These are very accurate and substantial castings, reasonably priced as this sort of 'collectors' figure goes.

In 20 mm (00) size there is a very neat kit of a British limber and field gun of the Crimean War period which is easy to assemble and paint and modestly priced at 7s 6d. Horses are not included. A realistic Royal Artillery gun crew of the Crimean period is also available at 5s for four men, specifically to go with the gun kit. The distributors are Ernest Berwick & Co, 11a Newland Street, Kettering, Northants, who supplied our review samples. C.O.E.

New Books—from page 215

tallies, etc, all in tabulated form.

The *Skyraider* book is a superb example of the complete aircraft monograph with hardly a relevant fact missing. Packed with pictures and text it includes scale drawings in colour and line, and several pages of most excellent colour artwork depicting representative machines and squadron badges. Apart from development and operational history it also has histories of individual squadrons operating the type. British and other foreign *Skyraiders* are not overlooked either in the text or the illustrations. Both books are highly commended for the US aircraft enthusiast, with the *Skyraider* volume taking the prize for one of the best produced aircraft books we've seen for some time.

Air race

THE GREATEST AIR RACE, by Nelson Eustis. Published by Angus and Robertson Ltd, 54/58 Bartholemew Close, London EC1. Price 30s.

MOST aviation enthusiasts know of the epic adventures of Ross and Keith Smith and their crew in the England-Australia flight in November-December 1919. Vickers Vimy G-EAOU, now preserved in Australia, became the first aircraft to complete the journey and won a £10,000 prize presented by the Commonwealth government. Few however know of the six other pioneers who set out to make the perilous trip including one, Captain R. M. Douglas who was killed when his aircraft crashed six miles after take-off from

Hounslow.

This book tells in graphic detail the adventures of the winners of the race and those others who fell by the wayside. It is an interesting story, well told and comes at a time when another England-Australia race is about to begin with it is hoped less of the hazards of aircraft malfunction, bad landing grounds, no navigation aids and fuel problems suffered by the first pioneers of the Empire route.

Aviation Annual

AIRCRAFT 'SEVENTY, edited by John W. R. Taylor. Published by Ian Allan Ltd, Terminal House, Shepperton, Middx. Price 15s.

JOHN TAYLOR'S annual comment on the aviation year has now become well known and acknowledged by all aircraft enthusiasts as a well conceived reasonably priced book packed full of excellent reference articles about a very wide range of subjects. This year's contribution is no exception and apart from the editor's look into the 'seventies there is a 'News of the Year' feature in which the important aviation events are recorded in date order by David Mondey.

Elsewhere such diverse subjects as 'Coastal Colours', a camouflage and markings article by Bruce Robertson, an illustrated piece by that well-known historian and champion of aircraft preservation Leslie Hunt on lesser known air museums, and a space article entitled 'Journey round the Moon' by Maurice Allard are included. Almost all sections of the enthusiast's world are covered in one way or another providing information and good reading in plenty.

Military Modelling—from page 221

pictured in 1943.

Grant Command tank; Lees and Grants used as command vehicles were often no different externally from other vehicles. However, an example of a specially adapted vehicle is shown as it appeared on the Italian front in 1945 as the general's personal tank in a South African armoured division. It had the 75 mm gun cut off to leave a stump (2 mm in the model) and the barrel of an old 75 mm M3 gun from a Sherman welded to the turret mantlet. A seat for observation purposes was fixed to the cross-girder on the superstructure roof just ahead of the turret. I used one left over from an earlier half-track conversion. The turret appears to have been fixed solid. Extra radio aerials were fixed in the centre of the barbette roof and the left mud-guard behind the light.

This particular vehicle had later M4 pattern bogies fitted with trailing return rollers, as included with the Sherman kit. The easy way to depict these, therefore, is simply to use a complete set of wheels and bogies from a Sherman kit and keep the original M3 bogies for use later on with the Sherman. You'll have to cut the locating pins off the Sherman bogies and just cement the assemblies to the Grant hull sides. The vehicle illustrated was dirty desert sand overall with random patches of dark earth. It carried no visible markings other than an Allied star on the turret roof, and even the 'T' number was almost completely obscured by over-painting.

M3 in Burma; Lastly, for those seeking a suitable version of the Lee/Grant for 'jungle' wargames against the Japanese, I have illustrated a Lee as used by the 3rd Carabiners in Burma in 1945. By this time the M3s were getting distinctly aged and no two vehicles

were exactly similarly fitted. My model is based on T25602 and is a 'standard' Lee with the following additions: stowage box from an old ammunition box on the turret rear, same style of stowage box on hull front to left of driver's visor, infantry telephone box on hull rear (see prototype picture for position), spare track shoes carried horizontally on hull front beneath driver's visor, spare road wheel on hull front, metal strip across nose above transmission humps, radio aerial in right rear corner of turret.

The other major additions were a round ventilator on the turret roof adjacent to the cupola, and another on the superstructure roof in the left front corner. In each case a Churchill road wheel half is just right for this, with the hole filled in with plastic putty. On the superstructure roof above the driver's visor goes a periscope block from a 2 mm x 1 mm scrap of plastic. Last of all the end 3 mm are cut off the end of the gun muzzle and replaced with a 3 mm length 2.5 mm in diameter to represent the counterweight fitted in all these later vehicles with the M2 75 mm gun.

The 3rd Carabiners vehicles were dark green overall with a very large white star on each hull side. Some also had a small star on the turret roof. There were no other markings on the vehicle modelled. The prototype picture shows a typical variation. T25602 is a Lee with the cupola removed (use the Grant hatch on the Lee turret here), and rear stowage boxes, plus a box behind the stowage compartment as already described for the Canadian Lee. Other details were as described, but rope lifelines were fixed on the turret sides (like a life-boat's life-lines) to provide a grip for infantry. There was a small white '4' on the right and left rear quarters of the turret.



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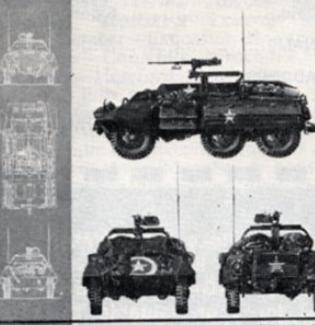
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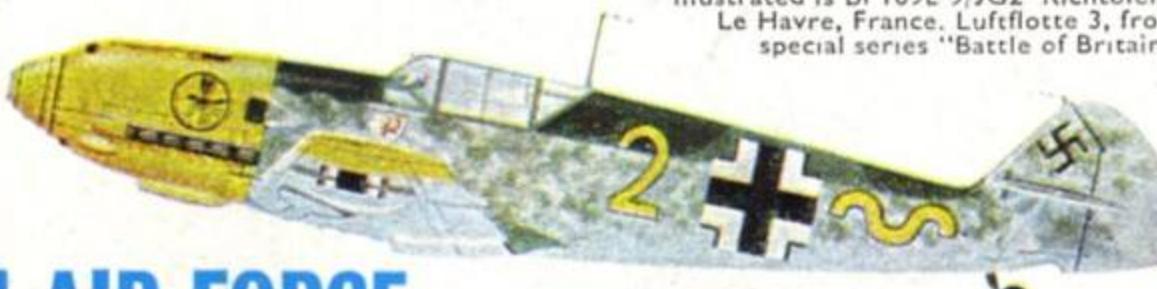
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